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ROYAL ASIATIC SOCIETY

[No. 40]

JOURNAL

June, 1904

Smithsonian Institution
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National Museum

Agents of the Society

London: Kegan Paul, Trench, Trübner & Co.

PRINTED AT THE AMERICAN MISSION PRESS SINGAPORE.

[No. 40]

JOURNAL

of the

Straits Branch

of the

Royal Asiatic Society

JUNE 1904

SINGAPORE:
Printed at the American Mission Press
1904

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Errata.

Page 5, bottom line *for* "Subdived" *read* "Subdivided."

Page 7, 6th line ,, "Plate VI" ,, "Plate VII."

Page 12, in foot note ,, "Kenyah-Kyan" ,, "Kelamantan."

Page 22, bottom line ,, "Stopes" ,, "Stops."

Page 32, 7th line ,, "Plate VIII, figs. 11 and 21" *read* "Plate VIII, figs. 11 and 12."

Page 52, 14th line ,, "Plate IV, fig. II" *read* "Plate IV, fig. 11."

Page 53, 8th line from bottom *for* "*tangkat krutak*" *read* "*tongkat krutak*."

Page 54, lines 13, 24 and 30 *for* "finical" *read* "finial."

An Illustrated Catalogue of the Ethnographical Collection of the Sarawak Museum.

INTRODUCTION.

The nucleus of the ethnographical collection of the Sarawak Museum is a collection made by Mr, Hugh Brooke Low, during the greater part of his service under the Sarawak Government (1869-1886); Mr. Low made full use of his opportunities and got together nearly 500 different objects of ethnographical interest chiefly from the natives of the Rejang and Batang Lupar rivers. The collection was sent to England and for some time was exhibited at the South Kensington Museum. In 1887, however, His Highness the Rajah of Sarawak purchased the collection, and in 1891 it was deposited in the newly-opened Sarawak Museum. To this nucleus have been added by constant additions nearly 1,500 specimens and so recently as 1899 a competent critic was able to assert that the Sarawak Museum contained " the best and most instructive collection of Sarawak ethnography extant" (" Nature " Aug. 31st 1899, p. 415.)

Unfortunately the Museum is but rarely visited by serious students of anthropology and as with the exception of Ling Roth's " Natives of Sarawak and British North Borneo " and one or two papers by Hein (Vienna, 1890), the culture-history of the Borneans has never been adequately pictured, it seemed advisable to compile an illustrated catalogue of this fine ethnographical collection, so that those interested in the natives of Borneo might have some sort of picture of them even if a more personal acquaintance was out of the question.

Even in Sarawak, well-protected as it is against European exploitation, great changes have taken place amongst the natives within the last thirty years; the great incursion of Chinese has had its effects; the dominant Sea-Dyak has increased enormously in the Rejang River, driving the Kyan, Kanowit and other tribes less robust than himself before him, so that the ethnographical variety of the chief river of Brooke Low's collecting area is now sadly diminished; finally the influence of the European on the change of native habits must not be left out of account. * The catalogue, then, is not begun a day too soon, reliable information on many specimens must be obtained now, or before many years it may be too late. As it is, the Srus, a tribe apparently allied to the Tanjongs, living near Kalaka, have forgotten all their old customs and culture, a fragmentary language alone remaining to suggest a less ignoble past; whilst the Tanjongs themselves, thanks to the gin-bottle and the immorality of their women are rapidly drawing near to the abyss of extinction. The project of such a catalogue as this was for some time in my mind, but the ways and means of production were difficult to find. However, at the end of 1902 the Council of the Straits Branch of the Royal Asiatic Society generously came to the rescue and the catalogue will be published in parts under their auspices.

The ethnographical collection now to be catalogued cannot claim to be absolutely complete, and there are many specimens scattered amongst European Museums which are unrepresented in the Sarawak Museum. These will be alluded to in the catalogue whenever possible and specimens known to the writer but unrepresented in any museum will also be noted. No particular order in the series of objects described will be observed, but each part will be produced as soon as it is ready. I have been fortunate in securing the collaboration of Dr. C. Hose, Resident of the Baram district, in at least one part of the catalogue and other local authorities have been as generous in supplying me with information as they have been in obtaining specimens for the Museum.

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* To give a concrete example of change:—It is no longer easy to obtain specimens of the *niabor* a variety of short sword formerly much in use amongst the Sea-Dyaks, the *jimpul and tilang kamarau* are much more common, the former was invented less than 20 years ago, the latter only last year. Numerous other examples might be quoted.

PART I.

Musical Instruments.

BY R. SHELFORD, M. A., F. L. S., ETC.

Curator of the Sarawak Museum.

The musical instruments of the Bornean tribes fall naturally into four main groups :—

1. Stringed instruments.
2. Wind instruments.
3. Jews harps.
4. Instruments of percussion.

They are described in this order. Each group can be subdivided into classes and under the class-headings are described the different 'species' frequently represented by more than one specimen. In addition to describing each specimen fully, I have quoted its number in the Museum catalogue and have recorded how and when it came into the possession of the museum; all measurements are given in centimetres. It will be seen that the Museum is indebted to many friends for valuable specimens; as it would be tedious to detail here all their names, I must express my thanks to them as a collective body; the names of Mr. D. J. S. Bailey, of the Sarawak service and Mr. E. W. Byrde, of the Borneo Co., cannot however pass without special notice, as to these two gentlemen I am indebted not only for many interesting and opportune specimens but also for much valuable information concerning them. My friend Mr. H. Balfour, curator of the Pitts-Rivers Museum, Oxford, has given me much useful advice and help, and his papers on musical instruments have served as models which I fear that nevertheless I have but imperfectly copied.

STRINGED INSTRUMENTS.

There are four main classes of stringed instruments in use amongst the tribes of Borneo*:—

I. Primitive musical bow—perhaps the progenitor of
II. Fiddles and guitars.
III. Upright harps.
IV. Cylindrical harps.

Class I.—Primitive Musical Bow.

This instrument is used only by the Tanjongs, a small isolated tribe living at Kapit, Rejang River, Sarawak. It consists of a flattened bow (*busoi*) with a rattan string laid across a pot of earthenware or metal, the mouth of the pot being closed by a wooden diaphragm (*aran*); the handle of the bow is grasped in the right hand and the taut bow string is tapped with a short stick held in the left hand; different notes can be produced either by fingering the string or by moving the bow so that different parts of its arc rest on the wooden diaphragm closing the pot. A very fair volume of sound can be produced. Until quite recently no specimens of this interesting musical instrument had found their way to European Museums, but there are now examples in the Anthropological Museums of Oxford and Cambridge Universities. The "Natural History of the Musical Bow" by H. Balfour (Oxford, 1899) should be consulted for a full and detailed account of the geographical distribution and evolution of this primitive type of musical instrument.

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* Dr. A. W. Nieuwenhius figures in "In Centraal Borneo" Vol. II Pl. LVII a Kayan girl beating with a stick on a string stretched longitudinally across a shield and bridged up with two cylindrical wooden plugs at the end ; underneath the plate is printed "Het Voordragen van zangen, de overleveringen van den stam, behelzende ":—i.e. the overture to a song, delivered by the assembled tribe."

But there is no reference to the illustration in the text and I believe that this is merely an improvised musical instrument, and one seldom in use.

1. Tanjong—*Busoi and Aran.*

a. (Plate I, fig. 1, upper specimen).

The *busoi* is a slightly bowed slat of hard black wood 93·6 cm. long and 4·4 cm. broad about its middle. One end is fretted and moulded and forms the handle, the other end has one border slightly excavated in the way shown in the figure. A strip of split rattan is strung through a hole near the handle and laced through two holes near the other end.

The *aran* is a disc of wood, 28 cm. in diam. with a large hole in the centre; the border for a depth of 2.5 cm. has been sloped down and a dog's tooth pattern is cut in low relief on it, the back ground being stained black with soot or indigo.

Catalogue No. 59. Brooke Low collection.—This specimen has been figured in "The Natives of Sarawak and British North Borneo" by H. Ling Roth, 1886 Vol. II p. 260, and in "The Natural History of the Musical Bow" by H. Balfour (1899) p. 69, fig. 49; the latter illustration is taken from a photograph of this specimen in the possession of Sir Hugh Low.

b. (Plate I, fig. 1, lower specimen).

The *busoi* is of soft white wood, 82·3 cm. long and 4 cm. broad in the middle. The concave side has a geometric pattern cut in bas-relief, the outstanding background being stained red with dragon's blood; the handle is unstained, it is moulded and fretted forming an S-shaped curve; the opposite end has its borders notched and curved, it is stained with dragon's blood and has a rosette (*buah trong*) cut in it. A strip of rattan is strung through a hole near the handle and laced through two holes near the distal end.

The *aran* is a disc of wood 30 cm. in diam. with an incised phyllomorphic pattern surrounding a central rosette; it is not perforated. The rattan *plectrum* is 31 cm. long. The pot over which the *aran* is laid is a common bazaar pot of Chinese make, light-blue in colour and glazed; 22·5 cm. diam.; 13 cm. high.

Catalogue No. 1230. [Hon. H. F. Deshon, [P. i. 03]

CLASS II.—FIDDLES AND GUITARS.

This main class may be subdived into two sub-classes:—

(*A*) Fiddles with straight wooden stem transfixing a resonator usually made from a hollowed-out coconut shell or gourd, and with one or more strings. Such are the one stringed *enserunai* of the Sea-Dyaks and the *sigittuad* of the Land-Dyaks and the two- or three-stringed *engkerbap* of the Sea-Dyaks. The performer on any of these instruments sits on the ground and holding the stem of the fiddle in his left hand rests the resonator against the calf of his left leg or else grasps with his toes the part of the stem that projects through the resonator ; the string is sawed with a very simple bow (*pengayat*) held in the right hand ; generally no sound can be produced until the string has been well moistened with saliva and even then the volume of sound is not great. The Sea-Dyaks imitate on the *enserunai* the dirges sung at deaths and at burial.

(*B*) Guitars, cut out from a solid block of wood, the resonator being hollowed out either from the back or from the front, and with from two to six strings, which are *strummed* with the fingers. Examples of such instruments are found amongst the Kayans, Kenyahs, Malohs, Dusuns, Malays, and Sea-Dyaks, the latter people having probably borrowed from the Malohs. The fiddle figured by Ling Roth l.c. Vol. II, p. 262 is undoubtedly Chinese ; numbers of these are made in Hong-Kong for export and can be bought any day in the Sarawak bazaars. The Malay fiddle figured on p. 266. Vol. II. of Ling Roth's work is Javanese and though the instrument is described as being of Borneo make, it cannot be regarded as typical of Borneo Malays. A very similar specimen bought from a Bugis is in the Raffles Museum, Singapore.

A. FIDDLES.

1. Sea-Dyak—*Enserunai* (Plate I, fig. 2.)

a.—(Second specimen from the left.)

Stem straight, transfixing the resonator and projecting considerably beyond ; the head is flattened and slightly enlarged ; its front border notched and moulded. The resonator is half a gourd (*genok selaing*), the bottom is perforated ; a diaphragm of monkey skin is lashed on with a rattan binding and tightened up with wedges (Plate VII, fig. 1). The string which is of rattan (*rotan sega*) at one end is looped over the part of the stem which projects beyond the resonator and passes from this point of attachment to the lower part of the head of the stem which is deeply grooved longitudinally; the string runs along the groove and out through a hole at the side and is then wound round the head (Plate VI, fig. 2); a notch on each side of the groove is evidently intended for the reception of a cross-bridge. There is no bridge for the string opposite the resonator. A bracing string of grass is present. The bow is of bamboo with a grass string. Total length of fiddle 68 cm.; diameter of resonator 9·5 cm.

Catalogue No. 55. Brooke Low Collection.

b. Stem straight of a hard dark wood, transfixing resonator and projecting considerably beyond. The head is not expanded; the front of the stem has a deep longitudinal groove for the greater part of its length; there are some shallow transverse grooves and incised lines distad and proximad of the longitudinal groove by way of decoration. The resonator is half a gourd, closed by a diaphragm of wood luted on with dammar, the bottom is perforated. The rattan string at one end is looped round the part of the stem that projects beyond the resonator, at the other it is wound round a slip of wood driven transversely through the stem (Plate VII, fig. 3) there are notches on each side of the groove for the reception of a cross-bridge. Two bracing strings of grass. Bow of bamboo; with grass string. Total length 60.5 cm., diam. of resonator 11.5 cm.

Catalogue No. 56. Brooke Low collection. This specimen has been figured by Ling Roth (l. c. Vol. II, p. 260).

c. (1st specimen on right). Stem straight, hemispherical in section, of a brown soft wood, transfixing resonator and projecting considerably beyond it, the head of the stem is enlarged flattened and bent forward at an angle to the stem, each side is carved in low relief with a phyllomorphic pattern and painted in three colours, red, yellow, and green. The resonator is half a cocoa-nut shell closed by a diaphragm of wood luted on with dammar; one of the "eyes" of the cocoa-nut has been bored forming an orifice at the bottom of the resonator. The rattan string at one end is looped round the part of the stem that projects beyond the resonator, the other passes into a groove and round a tuning peg that traverses the stem just below the head. Bridge missing; a long and stout bamboo bow with rattan string. Total length 78 cm; diameter of resonator 11.5 cm.

Catalogue No. 974. Brooke Low collection.

d. (2nd specimen from right). Stem straight, flattened, of hard brown wood; it transfixes the resonator but does not project much beyond; the head is enlarged, its front edge is notched and carved. The resonator is made from a section of bamboo, cut just above and just below a node; the septum of the bamboo is perforated with a star-shaped hole; the top of the resonator is covered with a diaphragm of skin lashed on with rattan (Plate VII, fig. 1); the plaited band of rattan (*c.*) encircles the resonator at the zone of the leaf-scars. The single rattan string is at one end looped over the stem in the usual manner, at the other end is lashed round the lower end of the head, passing through a hole in the front border; there is no tuning peg. There is a wooden bridge shaped like an inverted V, resting on the diaphragm of the resonator and a grass bracing string. The bow is of rattan with a string made from a strand of the stem of the bracken, *Pteris aquilina.* Total length 59.7 cm.; diameter of resonator 6.2 cm.; height of resonator 7 cm.

Catalogue No. 1228. D. J. S. Bailey, Esq. [P]; from the head waters of the Undup River.

e. (1st specimen on left). Stem of soft wood, almost square in transverse section; it transfixes and projects beyond the resonator; the head is much enlarged, flattened laterally and bent back at an angle to the rest of the stem; on each side a phyllomorphic pattern (*resam=Glĕichenia dichotoma*) is carved in deep relief. The resonator is half a cocoanut shell, one of the "eyes" at the bottom has been perforated; the mouth is covered with a diaphragm of monkey skin with the hair still on fastened with rattan lashings in the usual manner (Plate VII, fig. 1) The single rattan string at one end passes through a hole pierced in the part of the stem that projects beyond the resonator and is prevented from slipping through by a knot: the other end is attached to the tuning peg; this transfixes the head just above the angle, and in order to expose a length of peg round which to wind the string a deep short longitudinal groove is cut in the anterior face of the head, into this the string runs, is wound round the peg, passes out through the peg hole and is knotted to the peg outside the groove (Plate VII, fig. 4). A wooden inverted V-shaped bridge is set on the diaphragm and a small slip of wood is thrust under the string just before it enters the tuning-peg groove. There is a bracing string of grass. The bow is of bamboo with a grass string. Total length 83.5 cm; diam. of resonator 12.5 cm.

Catalogue No. 1229. D. J. S. Bailey, Esq. [P. ii. 03]. Except that there is only one string this instrument might be called an *engkerbap*, the shape and carving of the head of the stem being very characteristic of that instrument. From the Undup River.

2. Land-Dyak—*Sigittuad* or *Sigitot.* (Plate VII, fig. 7.)

Stem a length of bamboo (*tongon*). Resonator a hollowed-out coconut shell with the top third cut off, it is transfixed by a piece of wood (*benoah*) which then passes a short way up the cavity of the bamboo stem; in the bottom of the coconut shell is pierced a quincunx of holes; the top is covered by a circular sheet of sago-palm leaf, which is not secured in any way. There is one tuning peg (*thān*) which transfixes the stem back to front not from side to side as in the *enserunai.* The single string (*oöi*) which is the adventitious root of some epiphytic plant is knotted at one end of the piece of wood transfixing the resonator, at the other it is wound round the tuning peg. A triangular block of wood (*tikyer*) stands on the diaphragm and serves to bridge up the string. There is a small bow of bamboo with a string made from a strand of the stem of the common bracken, *Pteris aquilina.* Total length 62 cm. From the village of Krokong, Upper Sarawak.

Catalogue No. 1277. E. W. Byrde, Esq. [P. vij. 03]

The instrument is of very simple construction, in fact it was made in about half-an-hour, the taut string serves to keep every thing together, if this is slackened the diaphragm slips off the resonator and the resonator itself becomes detached from the bamboo stem. The Krokongs occasionally make more finished fiddles than the one described above, but there are no specimens of such in the Sarawak Museum nor have I ever seen one; in some instances the head of a *sigittuad* stem may be carved to resemble a hornbill's head.

3. Sea-Dyak—*Engkerbap.*

Stem straight of a soft wood, transfixing resonator and projecting slightly beyond; the resonator is half a coconut shell with a diaphragm of lizard (*Varanus salvator*) skin, secured by rattan lashings and wedges in the usual manner. The head of the stem resembles that in the *enserunai* No. 1229; the pattern has been painted red, blue, green and yellow. The two strings of split rattan are at one end tied to that portion of the stem which projects beyond the resonator, at the other they pass round two tuning pegs which are fitted as in the *enserunai* No. 1229. (Plate VII, fig. 4) The bow (*pengayat*) is of rattan with a grass string. Total length 97 cm. From the Batang Lupar.

Catalogue No. 1342. D. J. S. Bailey, Esq. [P. 29. ix, 03]

B. GUITARS.

1. Kyan—*Sapeh* (Pl. II, fig. 4.)

Two-stringed guitar strummed with the fingers. A large heavy instrument cut out of a block of *tapang* wood. The resonator has been hollowed out at the back to a depth of from 7 cm. to 10 cm.; the cavity is not closed by a diaphragm. The face of the resonator is somewhat convex; it is decorated with seven white discs formed of ground *Trochus* shells and at the base with an incised geometrical design typically Kayan in character arranged on either side of a pointed ridge. The stem is straight, thickening to the head which is carved to represent the head of a dragon (*asu*); a shell disc is let into the top of the dragon's head. There are two tuning pegs, one end of these is roughly shaped, the other is split to receive the strings which pass through holes in the stem (Plate VII, fig. 5) and so into the split ends of the pegs. The strings are of rattan, at their lower ends they pass through holes in the face of the resonator and are knotted to prevent slipping through. Bridge lost.

Total length, 12·5 cm.; length of stem, 46·8 cm.; greatest breadth of resonator, 28·8 cm.; breadth of resonator at the bottom 19 cm.; greatest depth of resonator 14·3 cm.

Catalogue No. 52. Brooke Low collection.

A diminutive model of a very similar instrument is hung on the wall of a model of a Kajaman house (Belaga, Rejang R.) recently presented to the Sarawak Musuem. Ling Roth, (l. c. Vol. II, p. 261) figures a similar instrument in the British Museum. This however was made by the Long Wai, who dwell on the Mahakkam River, they are grouped by Dr. C. Hose amongst the Kayans; the Long Wai name for this instrument is *impai*.

2. Dusun.—Two stringed guitar (? native name) (Pl. VII, fig. 6).

This is carved from a block of soft white wood. The stem is long, square in section about its middle, expanding at its junction with the resonator and at the head which is carved and moulded; on its front face five little blocks of wood are pegged on (3-3½ cm. apart), apparently to mark the fingering of the strings. The resonator which is somewhat boat-shaped is hollowed out from the back and the cavity is closed by a sheet of sago-palm leaf laced on with rattan stitchings to the wood. Both the front and the back of the resonator are perforated in their centres by two triangular holes, the apices of the triangles being conjoined. Part of the resonator is not hollowed but is produced distally as a solid piece, curved slightly upwards. A shaped ridge of wood terminating proximally in a square block is left on the face of the resonator; the two brass-wire strings are looped through holes in the ridge, pass through the square block up to the lower end of the head which they pierce and then are wound round two tuning pegs.

Total length 119·5 cm.; length of stem, 67 cm.

Catalogue No. 1274. Collected by the late Dr. A. Dennys Acquired by exchange from the Raffles Museum, Singapore.

A somewhat similar specimen is figured by Whitehead in "Exploration of Mount Kina Balu," (1893) p. 108.

3. Maloh and Sea-Dyak—*Blikan*.

a. Maloh—*Blikan* (Plate II, fig. 3). Two-stringed guitar cut from a block of soft white wood. The resonator is hollowed out from the front and the cavity is closed by a tightly-fitting wooden lid, securely pegged on; this lid is decorated with a geometrical design painted in indigo. The end of the resonator is produced and solid, it has been whittled and fretted to form a scroll. Four triangular holes, their apices conjoined are cut in the lid of the resonator and a block of wood is left attached to the lid just distad of the four holes. The stem is quite straight, somewhat triangular in section, it is very deep from front to back in its lower (distal) portion where it joins the resonator and the back of it here is scrolled and decorated with lines of black dammar; three chevrons of dammar are painted across the back of the stem higher up. The proximal end is expanded into a head carved to represent the head of a hornbill (*Buceros rhinoceros*) with a seed in its mouth, the neck is stained black. Two tuning pegs transfix the stem below the head. The two rattan strings distally are fastened to two little wooden spikes stuck into the wooden block on the lid of the resonator; proximally they pass through holes in the stem just over the tuning pegs, out through the tuning-peg-holes and are gripped in the split-ends of these pegs (Plate VII, fig. 5). Total length 89.8 cm.; length of stem 52 cm.; breadth of resonator 15.5 cm.

Catalogue No. 54. Brooke Low collection. Brooke Low (quoted by Ling Roth l. c. Vol. II, p. 262), describes a *blikan* in use amongst Saribas and Kalaka Sea-Dyaks; in this, the head of the stem is actually formed from the bill of a hornbill glued on to the stem, and is not a carved representation of a hornbill's head as in the Maloh specimen described above.

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* The Malohs whose headquarters appear to be the Kapuas river, Dutch Borneo, are an unsettled wandering people who frequently come over into Sarawak for trading purposes. Dr. A. C. Haddon, F.R.S., who measured 7 individuals finds that these had an average cephalic index of 76·2; he does not group them in any of the five classes into which he divides the natives of Sarawak, but it is likely that they [illegible] fall into the ~~Kenyah-Kayan~~ division (cf. A sketch of the Ethnography of Sarawak, Haddon, Archivio per l'Antropologia et l'Etnologia, Vol. XXXI, 1901).

Hose and McDougall, in a paper—"The Relations between Men and Animals in Sarawak" (Journ. Anthrop. Institute. Vol. XXXI, 1901. p. 198) write:—"The hornbill must be included among the sacred birds of the Iban (i.e. Sea-Dyaks), although it does not give omens. On the occasion of making peace between hostile tribes, the Ibans sometimes make a large wooden image of the hornbill and hang great numbers of cigarettes on it, and these are taken from it during the ceremony and smoked by all the men taking part in it." Smaller figures of the hornbill (*Penchallong—Buceros rhinoceros*) are suspended in Sea-Dyak houses during harvest feasts and food is either put into the mouths of the figures or else hung beneath them, (cf. Ling-Roth l. c. Vol. I, p. 256). There are several examples of these *Penchallong* in the Sarawak Museum; the birds are invariably represented as holding one or more seeds in their beaks. Amongst the Kenyahs the hornbill *Anorrhinus comatus* gives omens of minor importance. It is not surprising that so important a bird should figure in the decorative art of the Borneans.

b. Sea-Dyak—*Blikan.* Very similar to the preceding specimen, but roughly made and undecorated with carving or paint. The shape of the head suggests that it was intended eventually to carve it into a representation of a hornbill's head.

Total length, 79 cm. Length of stem, 52 cm.

Catalogue No. 1341. D. J. S. Bailey, Esq. [P. 25, viij. 03]. From the Batang Lupar.

It is highly probable that the Sea-Dyaks borrowed this instrument and its name from the Malohs; some of them at any rate assert so much.

5. Malay—*Gambus,* six-stringed mandolin, (Plate II, fig. 5).

The instrument is cut out from a block of *mirabou* (*Afzelia bijuga*) wood and is shaped like the European mandolin, i.e. the stem passes insensibly into the resonator and the shape of the instrument is that of a pear longitudinally bisected. Both the stem and the resonator are hollowed out from the front; the cavity of the stem is closed by a piece of wood nailed on, the cavity of the resonator by a diaphragm of skin, edged with blue cloth and nailed to the sides with brass-headed nails. The back of the resonator is perforated with a circular hole and the cover of the stem near its junction with the resonator is similarly perforated. This orifice is surrounded by incised lines forming a conventional flower design. A rectangalar block of wood is driven into the lower (distal) end of the resonator and through holes in this the strings pass to be attached to a cross bar of wood at its back. The stem is expanded proximally to form a curved head, the cavity of the stem is continued up into the lower part of the head, but not only is not closed in front, but the back of the head is here cut away leaving the two sides only, these are perforated with six holes for the tuning pegs; the rest of the head is solid and its sides are decorated with a phyllomorphic pattern in deep relief, in front with a phyllomorphic design in shallow relief and three brass headed nails. There are six tuning pegs (*petaran*) and six cotton strings. An inverted V shaped bridge rests on the diaphragm.

Total length 93 cm.; greatest breadth of resonator 16·9 cm. Catalogue No. 1207. [Pd. xii. 02.] It appears probable that this instrument has been borrowed from the Arabs. There is a similar specimen in the Cambridge Anthropological Museum obtained by W. W. Skeat, Esq., in the Malay Peninsula.

Class III.—Upright Harps.

(Plate II, fig. 6.)

These instruments, which appear to be used only by Muruts Dusuns (?) and Sea-Dyaks are roughly rectangular boxes (resonators) with a handle and an upright or a handle alone at each end. Strings are stretched in a vertical plane from one handle or upright to the other and are kept taut by upright bridges standing on the lid of the box; the addition of tuning pegs seems to be a modern development. The Murut harp is simpler in construction than the Sea-Dyak forms and its strings being looped through the handles, not tied separately as in the Sea-Dyak harps are in two parallel vertical planes instead of in one. The strings are strummed with the fingers of one hand whilst the lid of the resonator is tapped with the fingers of the other.

I am inclined to believe that the Sea-Dyak *engkratong* at any rate is derived from a stringed instrument like the *enserunai* through a guitar stage. In my private collection is a roughly made Sea-Dyak six-stringed guitar very like the Dusun guitar in shape but with a much longer projection distad of the resonator and this instrument is known to Sea-Dyaks as an *engkratong*. If the stem of this guitar was shortened to correspond in length with the distal projection and if the string were stretched between two uprights in a vertical plane the instrument would become an *engkratong*. It is at least curious that the guitar in this form should be known to the Sea-Dyaks only under the name of *engkratong*, and that it should have disappeared almost entirely from use.

Ling Roth (l.c. Vol. II, p. 260), figures a zither from S. E. Borneo in the collection of the Leyden Museum. It is a flat board with eight strings stretched across it and bridged up with a cylindrical piece of wood at each end; there is no information as to the tribe from whom the instrument was obtained. I do not consider that the instrument is connected in any way with the *engkratong*, and have doubts as to the correctness of the locality quoted.

1. Murut—Upright Harp. (Plate II, fig. 6, upper specimen).

A long narrow wooden box, truncate at one end, at the other tapering and produced into a handle; it is cut out of one piece of wood and hollowed out from the bottom, the cavity being closed by a wooden cover pegged on with wooden pegs. The handle is a flattened oval. Two loops of rattan (making four strings) pass through two holes in the handle to the opposite end of the instrument, where they perforate a projection from the wall of the box and are knotted to prevent slipping. The four strings are raised clear from the resonator by two upright bridges set in holes in its roof; the bridges have two notches on each side to receive the strings. The strings were originally of *bemban* (*Donax sp.*) but having been destroyed by insects, are replaced by rattan.

Total length, 117·6 cm.; greatest breadth, 7 cm.; depth, 6 cm. Catalogue No. 732. Dr. G. D. Haviland coll. From the head waters of the Tengoa River., British N. Borneo.

2. Sea Dyak.—*Engkratong.*

a.—A wooden box roughly rectangular in shape, the lower sides rounded, a projection at each end, all cut out of one block; the cavity is hollowed out from the top and closed by a tightly fitted lid of wood securely pegged down; the lid is perforated with a triangular hole in the centre, into the terminal projections are set two large flattened handles, carved and fitted into a phyllomorphic design. A slender wooden upright is stuck into each projection just where it issues from the resonator. Four separate rattan strings pass from one upright to the other, to one they are knotted by slip-knots, to the other by double hitches. Two wooden upright bridges stand on the lid of the resonator, they are notched on one side only to receive the strings.

Total length 106 cm.; resonator 41 cm. × 16·9 cm. × 10·1 cm.

Catalogue No. 53. Brooke Low collection.

This specimen has been figured by Ling Roth (l.c. Vol. II, p. 261); on the same page Ling-Roth also figures another specimen, one handle of which is a fowl's head, the other its tail, and describes this as being in the Brooke Low collection; I have been unable to find any trace of this particular instrument in the Sarawak Museum.

(Plate II, fig. 6, lower specimen).

b.—A rectangular wooden box with a handle at each end, all cut from one block; the box is hollowed from the top and the cavity is closed by a wooden lid nailed on; the lid is perforated with a circular hole in the centre; the handles are scrolled. Into each handle is set a stout wooden upright quadrangular in section, their tops are expanded and shaped to a leaf form, one in addition has one side carved in relief. Five rattan strings pass through holes in one upright to tuning pegs in the other, over notches in an upright bridge. Resonator, 58 cm.—15·6 cm.—14 cm.; height of upright, 29·3 cm.

Catalogue No. 1258. D. J. S. Bailey Esq., [P. xii . 02.]

CLASS IV.—CYLINDRICAL HARPS.

(Plate III, fig. 7. Plate VI fig. 14).

These are made from a joint of a large species of bamboo; the strings, four to twelve in number, are cut out from the bamboo but are left attached at their ends and are tightened with slips of wood thrust under them. The septa of the bamboo joint are generally perforated and to increase the resonance of the instrument a longitudinal slit or a hole is cut in it. This class of instrument is in use amongst the Kyans, the Kenyahs, the LongKiputs, the Kadyans, the Dusuns, and the Land-Dyaks. The method of performing on this instrument amongst the Land-Dyaks of the Sadong River is as follows:—

The performer sits on the ground, rests one end of the instrument against the side of his right foot and the back of it against his left thigh; the strings are struck with a short stick held in the right hand and with the left hand the player alternately opens and closes the upper and open end of the instrument; the strings can be tuned by altering the position of the bridges. Several men usually perform together and a sound like distant gongs can be produced by experts; other men accompany with the *lalipok* and *pelonchong*; the former is a portion of bamboo joint shaved down so that the wall is quite thin, one end is open and is struck against some hard substance; the latter is a piece of bamboo joint with a hole cut in the side and it is struck with a stick (Plate VI fig. 14). The Krokong Land-Dyaks still play on these harps at their festivals, the Sadong Land-Dyaks only occasionally play on them and then not seriously, whilst at Quop these instruments are merely toys made and played on by children.

1. Dusun—*Tangkungang*. (Plate III, fig. 7, left hand specimen).

Made from a single joint of bamboo which is cut off flush with the septa so that nothing projects at either end; both the septa are perforated. There were originally five strings arranged more or less equidistantly round the instrument; all but two of the strings broken. Total length 51·4 cm.; diameter, 10·5 cm.; distance between the strings, (measured along the curve of the bamboo) about 6·5 cm.

Catalogue No. 775. Drs G. D. and H. A. Haviland coll. [P. v. 92]. From Kiou, Mt. Kina Balu. The equidistant strings and the absence of projections beyond the septa show the primitive nature of the instrument; it is roughly made and is devoid of ornamentation. I have no information as to the method of performing on this instrument, but I imagine that it is held upright between the feet and that the strings are twanged with the fingers of both hands.

In the Raffles Museum, Singapore are two cylindrical harps purchased from the late Dr. Dennys and said to be Dusun. These are much more complicated in structure than those in the Sarawak Museum example. Both have twelve strings. In one these are arranged in groups of three, four and five, in the other in a group of seven, with the other five strings round the remaining periphery; in both, the bamboo projects considerably beyond the septa and the upper tubular projection so formed is deeply notched; one of the instruments has two longitudinal slits to increase its resonance.

2. Kanowit—Cylindrical Harp. (Plate III, fig. 7, right hand specimen).

At one end (the lower) the bamboo is cut off almost flush with the septum, at the other end (the upper) the bamboo projects 4·5 cm. beyond the septum and at one part still further, 11·6 cm., to form a shaped handle 7 cm. long. Round the top of the instrument runs a band of geometric pattern, roughly carved in low relief, the background stained with dragon's blood. There are only four strings arranged in pairs one on each side of a longitudinal slit in the body of the harp; this slit, which is enlarged at each end in the manner shown in the figure is on the same aspect (the front) of the harp as the handle. A band of plaited rattan encircles the harp at the levels of attachment of the strings to prevent them splitting off. The septa are not perforated. Length (exclusive of the handle) 63 cm.; diameter 11·8 cm.; distance between one pair of strings and the other, measured along the curve of the instrument in front, 11 cm.; measured along the curve at the back 13·5 cm.

Catalogue No. 563. Brooke Low collection. From the Kanowit River.

This instrument could be laid on its back and whilst the handle was grasped with one hand, the strings could be strummed with the fingers of the other, but I have no information as to how the Kanowits actually perform on the harp.

3. Long Kiput*—*Pagang* or *Kantom* (Plate III, fig. 7, middle specimen).

The bamboo projects 9 cm. beyond the septa and is there shaved down so as to be quite thin; on these shaved down portions are carved bands of simple design, such as rows of triangles, rows of dots, rows of oblique bars, the background is whitened with chalk or else the pattern itself is chalked and the background is blackened with indigo or soot. The septa are not perforated. There are six strings arranged in groups of three, one on each side of a middle line. A rattan plait encircles the harp at the level of attachment of the strings to prevent them splitting off. Down the front of the instrument run two short longitudinal slits, end to end; at the upper end of one slit and at the lower end of the other are three incised circles, between the two a group of five incised circles; the cuticle of the bamboo immediately bordering the slits is stripped off and on these areas is carved in relief in one case a chevron pattern in the other a dog's tooth pattern, the background is black and the relief chalked. Total length 77·5 cm.; diameter, 9·1 cm.

Catalogue No. 1069. R. S. Douglas Esq. [P. v. 00.] From the Baram River.

A Long Kiput harp is figured in Ling Roth's work (l.c. Vol. II, p. 262); it is from Dr. C. Hose's collection and is called a *Satong*.

4. Land-Dyak (Menggrat sub-tribe)—*Ton-Ton.* (Plate VI fig. 14).

a. Made from a joint of bamboo; the bamboo is not cut flush with its septa, but at either end projects considerably; one septum is broken through. Three strings or rather three broad strips (1 cm.) are cut out from the body of the instrument on one side but are left attached at each end and are prevented from stripping off by bindings of rattan. The central strip is bridged up with a block of wood in the middle and emits a high note; the side strips are bridged up at their ends and give a much lower note; under each side strip a diamond shaped hole is cut in the body of the instrument. A short stick for striking the strings is attached by string to the harp. Length 69 cm.; diam. 7.8 cm.

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* This tribe is placed by Dr. A. C. Haddon, (l.c.) in his group of Kalamantans.

Catalogue No. 1295. [Pd. viij. 03.] From Piching. Upper Sadong.

b. A specimen entirely similar to the preceding. Length 67 cm.; diam. 9 cm.

Catalogue No. 1296. [Pd. viij. 03.]

WIND INSTRUMENTS.

The wind instruments used by the tribes of Borneo may be grouped as follows* :—

A.—Without special vibratory apparatus.

I. Shell-trumpet.

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* In any wind instrument sound is produced by causing the column of air contained in it to vibrate, and the instruments have been classified according to the means employed to produce this vibration. An outline of such a classification will help to elucidate that which I have adopted for the wind instruments of the Bornean peoples.

1. Trumpets—in these air is driven forcibly into the instrument through the almost closed lips of the player, the lips vibrating act as a partial valve and the air enters the instrument in a pulsatory manner.

2. Flutes, pan-pipes, flageolets, whistles, etc. In instruments of this class a jet of air is directed against the edge of the sound hole (technically known as the "voice") and so is cut in two, causing an interference which sets the air in the instrument vibrating and produces a musical note.

a. Transverse flutes—in which a jet of air is directed by the lips against the edge of the "voice."

b. End-flutes, pan-pipes—in which the jet of air is directed by the lips across the open end of a tube so as to impinge against the edge.

II. Transverse flutes.*
III. Nose flutes.
IV. Flageolets and bird-calls with a directive duct built up outside the instrument.
V. Flageolets and whistles with a directive duct formed inside the instrument.

B. With special vibratory apparatus.

VI. Pipes with single "beating" reed (clarionet type).
VII. Mouth organs with single "free" reed (harmonium type).

CLASS I.—SHELL-TRUMPET.

Some Brunei Malays recently informed me that a trumpet, made by merely knocking off the top whorl of the large helmet-shell—*Cassis tuberosum*—, is used by them for calling their buffaloes together; their name for the trumpet was "*buyong*." I can hear of no other people in Borneo who employ a similar instrument.

CLASS II.—TRANSVERSE FLUTES.

I know of only one example of this type of wind-instrument, the *sulieng san* of the Sea-Dyaks; it is more difficult to play than

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c. Whistles—in which the jet of air is directed against the edge of the "voice" through a duct built on the outside of the tube.
d. Flageolets, whistles, etc. (flute à bec group) in which the jet of air is directed against the edge of the "voice" through a duct formed inside the tube.
3. Reed instruments.
  a. Clarionet, recorder, etc, with single vibrating reed ("beating reed.")
  b. Accordion, harmonium, etc.—with single reed vibrating equally on either side of a frame ("free reed.")
  c. Oboe, bassoon, etc.—with double valve both sides of which are flexible ("oboe reed.")

(There are of course many variants of these main types.)

* Classes II—VI are all bamboo instruments.

the nose flute or than any of the flageolets and this probably accounts for its sparse distribution.

1. Sea-Dyak—*Sulieng san* (Plate VIII fig 1.)

Made of bamboo, one end (the distal)* open and slightly obliquely truncate; the natural septum closes the other end; the bamboo has not been cut flush with this but projects considerably beyond it. The sound-hole is a long quadrangular slit cut close to the node of the bamboo. There are four open stops all on the same side and about 3 centim. apart. Total length, 83.3 cm.; diameter, 2.5 cm.

Catalogue No. 62. Brooke Low collection.

None of the Bornean tribes adopt any standard of measurement when boring stopes in their flutes, but bore them at the distances apart the most convenient to the maker.

CLASS III.—NOSE-FLUTES.

(Plate III fig. 8 and Plate VIII fig. 2.)

These are employed by Dusuns, Kanowits, Tanjongs, Kayans, Kenyahs and allied tribes, Sea-Dyaks and Land Dyaks.

A photograph of a Tanjong playing on a nose flute is given in Beccari's "Nelle foreste di Borneo" (1902) p. 424; the performer is seated cross-legged on the ground and holds the long bamboo flute across his body from right to left and almost at arm's length, the left nostril is applied to the proximal end of the instrument and directs a jet of air against the edge of the hole pierced in the natural septum of the bamboo.

Air is driven through only one nostril, the other is plugged with cloth or tobacco or moss (cf. Ling-Roth l. c. vol. II, p. 258). These instruments are generally long and are made from a single joint of bamboo, the distal end is open and the proximal end is closed by the natural septum which is perforated by an irregularly shaped hole; the leaf-scars and the wall of the bamboo immediately adjacent to the septum are shaved and smoothed down. Fig 2 Plate VIII is a representation of the proximal end of a nose-flute. The number of stops varies.

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*I term the end near or at which the sound hole is situated the *proximal* end; the opposite end, the *distal* end.

1. Dusun—*Turali.*

Made from a long joint of bamboo, the distal end is open and cut square, the proximal end is closed by the natural septum and the surrounding leaf-scars have been shaved off. The flute has been stained black with indigo. An irregular hole in the septum. There are four open stops, one on the underside for the thumb 34 cm. distant from the proximal end, three on the opposite side 5·5 cm. apart, bored in a flattened strip formed by removing the cuticle of the bamboo.

Length 70 cm.; diam. 2·2 cm. Catalogue No. 776.

2. Kanowit—*Sangoi* (Plate III, fig. 8, right hand specimen).

Of large size, the proximal end closed by the natural septum of the bamboo which is perforated with a single irregular orifice. There are four open stops, one on the underside for the thumb of the right hand, distant 55·2 centim. from the proximal end of the flute, and three on the upperside, 4–4·5 centim. apart for the first or second fingers of the right hand and the first and second or second and third of the left hand.

The flute has been stained red with dragon's blood. At a distance of 12 centim. and extending to a distance of 51 centim. from the proximal end is a design made up of four black hands spirally twisting round the instrument, this is followed by two circular black bands and six dog's-tooth pattern bands, which are succeeded by a repetition of the spiral design 72·8 centim. distant from the proximal end and 21·5 centim. in length; there is a terminal dog's-tooth design, beyond which the bamboo is fretted, eight diamond-shaped apertures being formed, the rim of the bamboo is notched, between the notched rim and the frets is a very rough dog's-tooth pattern. These patterns are painted on the bamboo with indigo though in parts it is partly in low relief as if the artist had first sketched out the patterns with a knife. A small tassel of variously coloured beads depends from the distal end of the flute.

Total length 107·3 cm.; diam. 3 cm.

Catalogue No. 60. Brooke Low collection.

Ling-Roth (l. c. p. 258) figures a Kenyah nose-flute (*Silingut*) in the collection of Dr. C. Hose.

3. Sea-Dyak—*Sulieng idong* (Plate III, fig. 8).

All these are of much less diameter than Tanjong, Kanowit, and Kenyah examples.

a. Third specimen from right.

The proximal end is closed in the usual manner, the distal end is closed by the septum of the joint and the bamboo projects beyond this; a large oval hole is cut in the flute just proximad of the distal septum, so that the flute has one end practically open. There is a stop on the under-side 51 centim. from the proximal end and three stops on the opposite side 4·5–5 centim. apart. The stops have been bored with a red-hot iron. Total length 98·5 cm.; diam. 2·7 cm.

Catalogue No. 558. Brooke Low collection.

b. Middle specimen.

Of similar construction to the preceding specimen, but the distal end quite open and cut obliquely. One stop on the under-side 46 centim. from the proximal end, three stops on the opposite side, about 5 centim. apart. Nine red bands formed by removing a strip of the cuticle of the bamboo and staining the exposed surfaces with dragon's blood—encircle the instrument; the stops are situated in four of these bands, three are proximad of the stops, two distad, the last being terminal; the bands are about 1·5 centim. broad. Total length 83 cm.; diam. 3 cm.

Catalogue No. 559. Brooke Low collection.

c. Similar to 559 but not decorated. The note-hole on the under-side is 51 centim. from the proximal end, the three stops on the opposite side are 3–3·5 centim. apart. Total length 75 cm.; diam. 2·5 cm. Badly damaged by beetle.

Catalogue No. 560. Brooke Low collection.

d. (Fifth specimen from the right).

Of the usual construction: the hole perforating the septum is regular, the distal end is cut square except for a triangular projection. The stop on the under-side is 40 centim. from the proximal end, the three on the opposite side are about 5, centim. apart. Four pairs of incised lines run round the flute, a stop being situated between each pair; it was evidently the intention of the maker to decorate the flute like No. 559. Total length 75 cm.; diam. 2·3 cm.

Catalogue No. 561. Brooke Low collection.

e. (Fourth specimen from the right).

Of the usual construction, the distal end obliquely truncate and the edges curved. The stop on the under-side is 35·5 centim. from the proximal end, the other three are about 5·5 centim. apart. The whole instrument, with the exception of a band at each end, has been scraped down and stained with dragon's blood, a dog's-tooth pattern has been cut in the proximal unstained band. Total length 70 cm.; diam. 2·7 cm.

Catalogue No. 562. Brooke Low collection.

CLASS IV.

Flageolets and Bird-Calls. With a directive duct built up on the outside of the instrument. (Plate III, fig. 8. and Plate VIII, figs. 3–10).

a. FLAGEOLETS.

This class of flageolet or whistle is in use amongst the Sea-Dyaks, the Land-Dyaks, the Muruts, and possibly some other tribes. There are four distinct ways in which the directive duct is formed :—

A.—A curved slip of bamboo is tied on to the flageolet with string or rattan, it occupies the space between the proximal end of the instrument (which may be open or closed by the natural septum) and the sound-hole (Plate VIII fig. 3).

B.—The bamboo is not cut perfectly flush with the septum but projects *slightly* proximad of it; the portion of the instrument between the proximal end and the sound-hole is shaved down and one side is cut flat, over this shaved-down portion a ring of bamboo is fitted. (Plate VIII figs. 4 and 5).

C.—Similar to the preceding except that a loop of rattan is fastened round the shaved-down portion (Plate VIII fig. 6).

D.—The bamboo is not cut flush with the septum but projects *considerably* proximad of it, in this projecting "tube" a hole is bored, a gutter runs from it to the sound-hole, and is roofed over with a slip of bamboo luted on with resin (Plate VIII figs 7 and 8).

A.

1. Sea Dyak—*Sulieng nyawa.*

(Plate III fig. 8. 5th specimen from left and Plate VIII fig. 3).

Flageolet of bamboo the proximal end cut square and open the distal end obliquely truncate with a projection and the edges notched. The sound-hole is 1·7 centim from the proximal end; just proximad of the sound hole a slip of bamboo naturally curved, is lashed with cotton to the instrument and projects slightly beyond its proximal end. There are four stops the uppermost is 12·2 centim. distant from the sound-hole, they are about 3 centim. apart from each other. The flageolet is covered with phyllomorphic patterns carved in low relief, the background being stained with dragon's blood. Total length 30·5 cm.

Catalogue No. 1113 [Pd. xii. 03.]

2. Land-Dyak (Bukar sub-tribe)—*Banchi.*

Flageolet of bamboo. The distal end is open, the proximal end is closed by the natural septum and the bamboo is cut flush with this. The directive duct is formed by shaving flat a strip between the sound-hole and the proximal end and tying over this with a piece of bark a slip of bamboo naturally curved. There are three stops situated on the opposite side to the sound-hole, they have been bored with a red hot iron in a flattened strip formed by removing part of the wall of the bamboo, they are 3.5 centim. apart. Total length 33·5 cm. diam. 2 cm.

Catalogue No. 1293 [Pd. viii. 03.]

From Lanchang, Upper Sadong district.

This flageolet is played with the sound-hole downwards; the Sea-Dyaks always bore the stops on the same side as the sound-hole which is therefore directed upwards when the flageolet is played.

B.

3. Land-Dyak (Krokong sub-tribe)—*Telarli.* (Plate VIII fig. 4 and 5.)

a. Distal end open and obliquely truncate, proximal end closed by the natural septum, the bamboo not projecting much beyond it. The wall of the bamboo distad of the septum is obliquely sliced on one side and in the exposed surface the sound-hole is bored ; between the sound-hole and the proximal ends the wall of the bamboo is shaved down and one side (that corresponding with the sound-hole) is cut flat ; over this portion of the flageolet a ring of bamboo (*bak*) is fitted. On the side opposite the sound-hole are five stops bored with a red-hot iron in a flattened strip formed by cutting away the cuticle of the bamboo ; the distances between the stops range from 2·3 centim to 3·7 centim., the uppermost is 19 centim. from the sound-hole. This form of flageolet is known as *laki*, i. e. male, it is played in the same way as the *banchi*, with the sound-hole downwards. Total length 43 cm.

Catalogue No. 1280. E. W. Byrde Esq. [P. vii. 03.]

From Krokong village, Sarawak River.

b. Much the same as the preceding but the distal end is not obliquely truncate; there are only two stops and these are on the same side as the sound-hole, they are 4·5 centim. apart and the upper one is 25·5 centim from the sound-hole. This form is known as *puan*, i. e. female. Total length 46 cm.

Catalogue No. 1281. E. W. Byrde, Esq. [P. vii. 03.]

From Krokong village ; Sarawak river.

4 Trusan river *ageolet.*

Distal end open and cut square, proximal end closed by the natural septum and the bamboo cut flush with it ; the sound-hole is bored 4·5 centim. from the proximal end and the intervening portion of the bamboo wall is shaved down and one side is flattened, over this is fitted a ring of bamboo. There are two stops bored in a flattened strip on the same side as the sound-hole. They are 5·5 centim. apart, the upper one is 44·5 centim. from the sound-hole. The flute is decorated with an incised phyllomorphic design roughly executed. Total length 64·5 cm.; diam 1·7 cm.

Catalogue No. 1292. F. J. D. Cox, Esq. [P. viii. 03.]
From the Trusan river.

5. Sea-Dyak—*Sulieng nyawa.*

(Plate III fig. 8, second specimen from the left).

Distal end open and cut square, proximal end closed by the natural septum, the bamboo projecting slightly beyond it. The sound-hole is bored just distad of the septum and the bamboo wall between it and the proximal end is shaved down in the usual manner; the bamboo ring that fits over this portion has been lost. There are three note-holes about 3 centim. apart from each other, the uppermost being 25 centim. from the sound-hole. Total length 41·3 cm.; diam. 2 cm.

Catalogue No. 64. Brooke Low collection.

It is quite possible to play on this flageolet and the three preceding ones even if the bamboo ring is removed, the upper or lower lip in that case helping to form the directive duct; it is therefore just possible that the Sea-Dyak flageolet never was furnished with a bamboo ring but I think that this is unlikely and at any rate the Sea-Dyak specimen falls naturally into position with the Murut and Land-Dyak ones.

C.

6. Land-Dyak—*Kroto* (Plate. VIII fig. 6.)

Distal end open and slightly obliquely truncate, proximal end closed by the natural septum, the bamboo projects slightly beyond this; slightly distad of the septum the bamboo is obliquely sliced and in the exposed surface the sound-hole is bored with a hot iron; between the sound-hole and the proximal end the bamboo wall is shaved down and has one side flattened in the usual way. Instead of a bamboo ring fitted over this portion a strip of split rattan is wound round it, knotted once, then carried down the back of the instrument and tied round it six times in the manner shown in the drawing. There are five stops on the opposite side to the sound-hole bored with a red-hot iron in a strip flattened by stripping off the cuticle of the bamboo. They are 2·5 centim. apart. Total length 39 cm.

Catalogue No. 1282. E. W. Byrde, Esq. (Pd. vii. 03). From Sambas, Dutch Borneo.

D.

a. Murut—Flageolet. (Plate VIII figs. 7 and 8.)

Distal end open and cut square, proximal end closed by the natural septum, the bamboo has not been cut flush with this but projects considerably beyond it; in the wall of this projecting part a small hole is bored quite close to the septum, and a groove runs on the outside of the flute from this hole to the sound-hole, the groove being covered by a slip of bamboo luted on with dammar. The edge of the sound-hole is sharpened by a piece of palm-leaf stuck on to it. The sound-hole is 5 centim. from the proximal end; there are two stops 8·5 centim. apart bored with a red-hot iron in a flattened strip on the same side as the sound-hole, the upper one is 32 centim. from the sound-hole. Total length 52·5 cm.; diam. 2·5 cm.

Catalogue No. 1291. F. J. D. Cox, Esq. (P. viii. 03). From the Trusan river.

b. (Plate III fig. 8, second specimen from right).

Very similar to the preceding; there are two lashings of split rattan round the distal end of the instrument to keep it from splitting; the slip of bamboo roofing over the directive groove has been lost. Some rude representatives of animals (? buffaloes) have been scratched with the point of a knife on the wall of the instrument but there is no attempt at a decorative pattern. The two stops are 7·5 centim. apart; the upper is 45 centim. from the sound-hole, which is 7·5 centim. from the proximal end. Length 72 cm.; diam. 3 cm.

Catalogue No. 733. Dr. G. D. Haviland (P. 1890). From the head of the Tengoa valley.

b. BIRD-CALLS.

Though these are not musical instruments in the strictest sense of the word they deserve notice here since morphologically at least they are musical instruments. I know of two distinct forms of bird-calls used in Borneo :—

1. Kyan—*Bulo wok.* (Plate VIII fig. 9.)

These are constructed on the same principle as the bamboo flageolets of type D, but they are made of a larger species of bamboo and are much shorter. With these the Kyans imitate the cry of the owl *Ninox scutulata* and the cry of the gibbon *Hylobates mulleri.*

a. Distal end open, proximal end closed by the natural septum, the bamboo not cut flush with this but projecting almost as far proximad of it as it does distad ; in this proximal portion a large hole is bored, the very large sound-hole is bored just distad of the septum and leading to it from the other hole on the outside is a wide gutter or groove roofed over with a slip of bamboo luted on with dammar. The instrument is decorated with a characteristic Kyan design carved in low relief. Length 12·7 cm. ; diam. 5·1 cm. ; diam. of sound-hole 2·3 cm.

Catalogue No. 1289. [Acquired by exchange from Dr. C. Hose. ix. 03]. From the Baram river.

b. The distal end open, proximal end closed by the natural septum. The bamboo projected considerably proximad of this but nearly all has been cut away leaving only a small flange in which a hole is bored (*see* figure) ; the sound hole and directive duct as in the preceding example. The instrument, which is not ornamented in any way, is illustrated on Plate VIII, fig. 9. Length (including flange) 13·5 cm. ; diam. 4·9 cm.

Catalogue No. 1290. [Acquired by exchange from Dr. C. Hose ix 03]. From the Baram river.

The Sea-Dyaks, Kenyahs, Kadyans and Muruts employ an interesting form of bird-call for attracting within reach pigeons and ground-doves. It consists of a section of a large species of bamboo, with a sound-hole bored in it and with one end open, the other closed by the septum; to this section of bamboo a long bamboo stem, with the septa broken through so that a long tube is formed, is obliquely attached so that a current of air directed down the tube impinges against the edge of the sound-hole bored in the bamboo section. The hunter conceals himelf amongst herbage or in a leafy shelter and scatters some grain around, and then blows his call; if any bird comes within reach it is captured by a noose at the end of a long stick, the noose being generally spread round the mouth of the bird-call; sometimes the birds are limed. The bird-call is, in fact, a wind-instrument with a directive duct (the bamboo tube) attached to it and falls into Class IV in the classification given above. Ling-Roth (l. c. vol. p. 44) gives a good figure of a Murut bird-call and quotes Burbidge's account of its use.

2. Sea-Dyak—*Bumbun.* (Plate VIII fig. 10)

a. Bamboo section of 6 cm. diameter and 51 cm. in length with one end closed by the natural septum the wall not cut flush with this but projecting considerably proximad of it, the other end open and very obliquely truncate so that a projecting spout is produced. The sound hole is bored at a distance of 10·5 cm. from the septum on the distal side. The portion of the bamboo projecting proximad of the septum is vertically transfixed by a wooden upright with a large circular hole in it. The bamboo tube is 233·5 cm. long; it passes through the hole in the wooden upright and is lashed to the bamboo section by rattan; its distal end is obliquely truncate and fits the curvature of the bamboo section leaving only a narrow passage through which the current of air passes to impinge against the edge of the sound-hole; the joint is made secure by a luting of dammar.

Catalogue No. 686. Ven. Archdeacon J. Perham [P.]

b. A very similar specimen, but the spout-like projection of the bamboo section much more pronounced. A long bamboo rod to which a noose should be attached is tied to the bamboo stem of the instrument. Length of bamboo section 51 cm, diam. 6 cm. Length of bamboo tube 221.5 cm.

Catalogue No. 1035. J. E. A. Lewis, Esq. [P. ix. 98.]

CLASS V.

Flageolets and whistles, with a directive duct formed on the inside of the instrument. (Plate III, fig. 8, and Plate VII, fig. 8 and Plate VIII, figs. 11 and ~~21~~)./12

This type of flageolet seems to be in use amongst the Sea-Dyaks only.

1. Sea-Dyak—*Sulieng nyawa.* (Plate III, fig. 8, and Plate VIII, figs. 11 and 12)./

a. (First specimen on the left). Distal end open and obliquely truncate, proximal end cut square and closed by a disc of wood; the sound-hole is quadrangular and is cut quite close to proximal end; the disc of wood closing the proximal end is narrowly grooved on the side corresponding to the sound-hole. There are four stops, 1·9 centim. apart, the uppermost 18.8 centim. from the sound-hole. Length 37 cm.; diam. 1·8 cm.

Catalogue No. 63. Brooke Low collection.

b. (Fourth specimen from the left). Very similar to the preceding; one stopon the opposite side to, and distant from the sound-hole 31·3 centim. three stops on the same side as the sound-hole about3 centim. apart. Length 51·5 cm.; diam. 1·9 cm.

Catalogue No. 65. Brooke Low collection.

c. (Third specimen from the left). Very similar to No. 63, but proximal end slightly obliquely cut in a opposite direction to the oblique truncation of the distal end. Four stops 3–3·5 centim. apart, the uppermost 19·2 centim. from the sound-hole. Length 44·6 cm.; diam. 2 cm.

Catalogue No. 66. Brooke Low collection.

d. A long slender instrument; proximal end slightly obliquely truncate and closed by a disc of wood grooved as in the preceding specimens. Sound-hole quadrangular, cut close to the proximal end. Three stops about 4 centim. apart, the uppermost 38 centim. from the sound-hole. The instrument is elaborately carved; the distal third is ornamented with bands of phyllomorphic patterns in low relief, the background being stained red with dragon's blood; proximad of this is a zone 10 centim. broad of five bands of phyllomorphic patterns in low relief, the background composed of hatched incised lines (very unusual in Sea-Dyak carving); proximad again of this zone is a zone 12 centim. broad of bands of phyllomorphic patterns which have just been sketched out with the point of a knife and never completed. Lengths 54 cm.; diam. 2 cm.

Catalogue No. 556. Brooke Low collection.

e. Somewhat similar to the preceding specimen, but much smaller. Proximal end very obliquely truncated, the opening filled by a plug of wood which has been grooved to form the directive duct; distal end cut square, the wall of the flageolet projects beyond the node but the septum has been broken through. Sound-hole large; there are eight stops, seven on the same side as the sound-hole, one is on the opposite side, they are about 1·5 centim. apart, uppermost 17 centim. from sound-hole. Five bands of tin encircle the instrument in the interspaces between stops 2 to 7; the rest of the instrument is covered with phyllomorphic patterns carved in low relief, the background being stained red with dragon's blood. Length 32 centim.; diam. 1·6 centim.

Catalogue No. 1044. Presented to the Museum by a Sea-Dyak boy at the S. P. G. Mission School.

It is more than likely that this specimen is copied from a European model; the number of stops and the very oblique truncation of the proximal end are most unusual; still No. 556 is more or less intermediate between this school-boy's specimen and such a one as No. 63, so that I have thought it worth while to include a notice of it.

The next instrument of this class is of a different type, it is a clay whistle not unlike the " Ocarina " of European manufacture.

2. Sea-Dyak—*Penyipu*, (Plate VII fig. 8).

A hollow ovoid of white clay, sharply pointed at one end, truncate at the other. There is a large sound-hole putting the cavity of the instrument in communication with the exterior. A narrow duct runs from the closed truncate end through the wall of the whistle to the lip of the sound-hole ; it has evidently been bored with a fine piece of wire or grass stem whilst the clay was still soft. There are two key-holes of narrow diameter on the opposite side to the sound-hole. Length 13·3 cm.; greatest diam. 5 cm.

Catalogue No. 990. D. J. S. Bailey, Esq. [P]. From Kabong, Saribas River.

CLASS VI.

PIPES—With single " beating" reed (Clarionet type).*

(Plate VIII fig. 13.)

I long believed that this extremely primitive form of reed instrument was non-existent in Borneo ; it is true that St. John (quoted by Ling-Roth l.c. Vol. II. p. 259) describes a musical instrument in use amongst the Muruts,† which appears to have some simple sort of vibratory apparatus, but the description is rather vague so that it is not easy to recognise the construction of the instrument from it. Recently Mr. E. W. Byrde presented to the Sarawak Museum two primitive bamboo pipes with "beating" reeds from the Land-Dyaks of Upper Sarawak and later I myself had the opportunity of seeing similar instruments played by Land-Dyaks of the Upper Sadong district. I have now no doubt that St. John's description of the Murut pipe applies to an instrument entirely similar to the Land-Dyak examples. No other tribes in Borneo but these two—Muruts and Land-Dyaks—appear to employ this instrument.

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* For an interesting account of wind-instruments of this class see H. Balfour " The Old British Pibcorn or Hornpipe and its affinities" (Journ. Anthrop. Inst. Nov. 1890). Mr. Balfour figures and describes reed-pipes from England, Grecian Archipelago, Egypt and India ; nearly all are double pipes like the Bornean simpler instrument, but they all are probably derived from a single pipe cut from a cornstalk, reed or bamboo. Mr. Balfour's quotations from Vergil, Chaucer, Spenser and Shakespeare are very much to the point.

†" Two thin bamboos, about twelve inches long, were fastened very neatly side by side ; in one was cut four holes like those in a flute, while the other had a piece of grass inserted in the lower end. A slight incision was then cut across both towards the upper portion. The performer thrust this instrument rather deep into his mouth and blew, and then, with the aid of tongue, fingers and moving the grass, produced some very agreeable and wild tunes."

1. Land-Dyak —*Serubayi* or *Seruné.*

a. (Plate VIII fig. 13.)

Two slender tubes of bamboo bound together with a grass strapping; the proximal ends are closed by the natural septa and the wall of the tubes has been pared down for a length of about 7 centim. so as to be quite thin; a vibrating tongue (*jorah*) has been cut in this part of the wall in each tube by slitting from above downwards a slender strip) thus forming a "beating" reed; a fine hair is tied round one pipe to restrict the play of the tongue. One of the tubes, known as the *laki* or *male tube* is provided with five stops (*quayet*) about 2·6 centim. apart, the other, known as the *puan* or *female tube*, has none. The *laki* has a short length of bamboo (*tubu*) fitted over its distal end whilst the distal end of the *puan* or drone-pipe is obliquely truncated. Length of *laki* 49·1 cm.; length of drone-pipe 37 cm.

Catalogue No. 1275. E. W. Byrde, Esq. [P. 6. vii. 03.]

b. A very similar specimen, but each pipe has a short length of bamboo fitted over its distal end; length of *laki* 46 cm. length of drone-pipe 40 cm.

Catalogue No. 1276. E. W. Byrde, Esq. [P. 6. vii. 03.]

Both of these come from Krokong village, Upper Sarawak, and are known as *Serubayi.* The note of the drone-pipe is supposed to be the same as the note of the *laki* when all the stops but the fourth are closed, and in order to tune the pipes either a length of bamboo is added to one or to both or the distal end of one is obliquely truncated, thus practically reducing its length. If in spite of these devices the pipes are still out of tune a length of grass or wood splinter (*adjok*) is pushed up the drone-pipe and moved up and down until the correct note is hit off. Mr. Byrde informs me that one of the specimens just described was cut to almost accurate lengths and required no tuning with the *adjok*.

c. Very similar to the two preceding specimens, the *laki*, however, has only four stops about 3 centim. apart, the drone-pipe is pierced with five stops but they have all been plugged up with wax. The distal ends of the pipes are cut square and are not fitted with lengths of bamboo. Length of *laki* 43·5 cm.; length of drone-pipe 38·7 cm.

Catalogue No. 1324. [Pd. viii. 03.]

From Piching village, Upper Sadong. Known as *Seruné*. The performer on this instrument tuned it by thrusting a piece of grass up the drone-pipe and moving it up and down until he hit off the correct note. As the vibrating tongues are cut at some little distance from the proximal ends of the pipes, these have to be thrust well into the mouth; a continuous blast was given by inhaling with the nostrils and blowing into the instrument with the mouth simultaneously, just as in using the chemist's blowpipe.

The Land-Dyaks of Quop, Sarawak river, also play these pipes; they always leave the proximal ends open and close them, when playing, with the tongue, the 'beating' reed is cut much closer to the proximal end than in Krokong or Sadong examples; sometimes three pipes are bound together, two being drone-pipes. A good set will be kept in a bamboo full of water, as the pipes are generally made from fresh-cut bamboo stems and when they become dry the tongues will not vibrate effectively.

CLASS VII.

MOUTH-ORGANS—with single 'free' reed. (Plate III fig. 9).

These instruments, which are figured in almost every book on Borneo, consist of a hollowed gourd with a long neck the mouth piece of the instrument; into the gourd are set six to eight bamboo tubes, the joint being made air-tight with a luting of dammar; the tubes are closed at their lower ends but into each near its lower end * is let a small frame of *apeng* palm wood (*Arenga* sp.) or of brass with a vibrating tongue (Plate VII fig. 10); each tube has a stop and if these are not closed by the fingers no sound can be produced by blowing into the neck of the gourd; the tubes are of unequal length and are tuned by being cut more or less obliquely at their upper ends, and one is generally much longer than the others.

This form of mouth-organ seems to be essentially a Mongolian type very similar instruments being found in China (the *Seng* or *Cheng*), Japan and Siam; Hein (Die Bildenden Künste bei den Dayaks auf Borneo. Vienna, 1890 p. 116 fig. 78,) figures a Chinese *Seng*, a mouth-organ of the Mrung of India and a Kyan mouth-organ, and notes that all are constructed on essentially the same principle, he does not, however, describe the form of the vibratory apparatus in any of these instruments so it is quite possible that the Mrung mouth-organ is furnished with 'beating' reeds instead of 'free' or 'framed' reeds.

A good figure of a Kyan youth playing on a mouth-organ is given in "In Central Borneo" by Dr. A.W. Nieuwenhuis, Vol. II. pl. lxxxviii.

The instruments are played more by suction than by blowing. The Bornean tribes who use this instrument are the Kyans, Kenyahs and allied tribes, the Dusuns, Punans and the Sea-Dyaks, it is almost certain that the latter and very probable that the Punans have borrowed this instrument from the Kyans or Kenyahs.

1. Kyan—*Klerdi.*

a. (Plate III fig. 9 right hand specimen).

Of large size; six bamboo tubes open at the top are inserted into a large hole cut in a hollow gourd (*labu ayer genok*,) the joint being rendered air-tight by a luting of dammar;

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* *i.e.* in that portion of the tube inside the gourd.

the gourd has a long curved neck which forms the mouth-piece of the instrument. One of the bamboo tubes is 130 centim. long from its point of insertion into the gourd, its top is slightly obliquely truncate, its note is lower C; another is 75·5 centim. long with the top cut square and its note is lower E; a third is 75 centim. long, with note lower F; a fourth 74·6 centim. long with note lower G; a fifth is 74 centim. long but is so obliquely truncate that its functional length may be reckoned as 56·8 centim. only, its note is middle B; the sixth is very similar but its length may be reckoned at 55·2 centim. with the note middle C. The bundle of tubes is bound together by an encircling band of plaited rattan. A cap of bamboo cut from a node, with a long projecting tongue rests on the top of the longest tube, to the lower end of the tongue is attached a string tied at its other end to a plaited band of rattan that slips freely over the bundle of tubes, the outside of the cap has a frill of shavings scraped partially off it; when the cap is pulled down hard over the top of the long tube the note of that tube is rendered more resonant. Total length (in a straight line) 119·3 cm.; length of gourd (in a straight line) 23.8 cm.

Catalogue No. 1085. [Pd. 10. x. 00].

This specimen is in good working order and as it has not been dissected it is impossible to say whether the vibratory apparatus is of brass or of palm-wood. Ling Roth (l.c. vol. II p. 259) figures an almost identical specimen and gives the notes produced by it.

b. Very similar to the preceding, but in bad condition when received and it has been dissected to exhibit its construction. The gourd has a star-shaped hole cut in it to receive the tubes. One of the tubes is 72 centim. long, the rest vary between 60 centim. and 60·5 centim. two are very obliquely truncated at their top ends. The vibratory apparatus is made of *apeng* palm (*Arenga* sp.) the tongues have each a little knob on their ends (Plate VII fig. 10) to increase their range of vibration.

Catalogue No. 1246 Hon. C. A. Bampfylde. [P. 26. ii. 03].

2. Punan—*Mouth-Organ.*

The gourd of the preceding specimens is replaced by two hollowed pieces of wood, joined together with a luting of dammar and three stitches of rattan; the two halves have been shaped to form a very fair imitation of a gourd with a long neck. The usual six tubes are let into this sham gourd and luted with dammar. The longest tube measures from its point of insertion into the gourd 67·5 centim.; its top is slightly obliquely truncate and it is covered by a bamboo cap like that of No. 1085, its note is middle A flat. Three tubes are shorter their lengths varying from 46·7 centim. to 47·2 centim. their tops are cut square and their notes are middle B, middle C (not quite true) and middle D. Another measures 46·4 centim.; but it is very obliquely truncate so that its functional length may be reckoned at 34·3 centim.; its note is upper F. The sixth tube is 43·8 centim. with functional length of 33·5 centim. and note upper G. Total length (in a straight line) 72 centim.

Catalogue No. 1260. [Pd. iii. 03].

The Punans are a nomadic jungle tribe who neither plant nor sow; having probably borrowed the idea of the mouth-organ from neighbouring Kyans or Kenyahs, it was necessary to make imitation gourds of wood as they have no real gourds of their own.

3. Sea-Dyak—*Engkerurai.* (Plate III fig. 9 left hand) specimen.

Much smaller than the Kyan *klerdi.* The longest tube measures 67·5 centim. the others 44 centim. to 44·5 centim. two of these are very obliquely truncate. The bundle of tubes is bound round a central upright of wood by a band of plaited rattan. The vibratory apparatus is of brass. The instrument is not in working order. Length (in straight line) 70 cm.

Catalogue No. 61. Brooke Low collection.

The Sea-Dyak mouth-organ is generally much smaller than the Kyan one; the longest reed is usually provided with a cap of bamboo to act as resonator, but the most efficient resonator that I have seen was a small tin through the bottom of which the long tube passed. Ling-Roth (l.c. vol. II p. 259) figures a Dyak engkerurai with seven reeds and states:—"Some of the notes appear to be FACF—F octave nearly; two holes in one reed, note unascertainable; two reeds appear to have no note [? defective vibratory apparatus. R.S.] Longest reed (one which has no note) to junction with gourd, 31 in.; diam. of gourd, 3¾ in. (Edinboro' Mus)."

The Kenyah mouth-organ is known as *Slidap*. The Dusun mouth-organ has eight reeds set into the gourd in two rows of four, four are short and equal, four are longer and unequal, there are no stops but the fingering is performed on the ends of the four equal short pipes, the others acting as drone-pipe (cf. Ling-Roth l.c. vol. II p. 260).

There is no specimen of a Dusun mouth-organ in the Sarawak Museum.

JEWS-HARPS.

The jews-harp of the Borneans are made either of Palm wood such as *Arenga* sp. (*Aping*), *Arenga saccharifera* (*ijoh*) and *Orania macrocladus* (*ibul*) or else of brass. In all, sound is produced by causing the tongue of the instrument to vibrate, either by jerking upon a string attached to one end of the instrument or else by jarring the frame of the instrument by repeated taps with the finger. "A single note is thus produced, and, in order to gain a variety of notes, the instrument is held to the performer's mouth, which also performs the function of a resonator. To quote Sir George Grove, 'A column of air may vibrate by reciprocation with a body whose vibrations are isochronous with its own, or when the number of its vibrations are any multiple of those of the original sounding body. On this law depends the explanation of the production of sounds by the jews-harp. The vibration of the tongue itself corresponds with a very low sound; but the cavity of the mouth is capable of various alterations; and when the number of vibrations of the contained volume of air in any multiple of the original vibrations of the tongue, a sound is produced corresponding to the modification of the oral cavity.'" (H. Balfour Journ. Anth. Inst. Vol. XXXII p. 169, 1902). The Sea-Dyaks employ wooden and brass jews-harps which are caused to sound by jerks on a piece of string attached to one end of the frame of the instrument, the other end of the frame is held between the finger and thumb of the other hand. The Dusuns employ a wooden jews-harp but play it by repeatedly striking one end of the frame with the fore finger of the right hand and the Land-Dyaks play on a brass jews-harp in the same way. The Dusun and Land-Dyak jews-harps are produced at one end to form a handle but the Sea-Dyak forms have usually no handle the instrument consisting merely of a tongue and a frame the ends of which are roughly symmetrical.

1 Sea-Dyak—*Ruding.*

a. (Plate V fig. 13, second specimen from the bottom).

Made of apeng wood (*Arenga sp.*) with the cuticle still left on the face of the instrument; the back of the instrument is longitudinally concave and the wood has been scraped down so that it is quite thin except at the ends which are thick and almost flat. The tongue is 8 centim. long its proximal half is 0·5 centim. broad, its distal half only 0·2 centim.; there is a marked ‘shoulder’ half way down the tongue. The frame follows the outline of the tongue. The ends of the instrument are bluntly pointed. To one end of the instrument a short piece of string with a slender wooden toggle is attached; through a hole in the other end passes a short loop of string, which is stretched taut by the third and fourth fingers of the left hand when the instrument is held ready for playing between the finger and thumb of the same hand. The instrument is contained in a small case of bamboo decorated with a phyllomorhic design in low relief with the background stained red by dragon’s blood.

Total length 10·8 cm.; breath 1·5 cm.

Catalogue No. 204. Brooke Low collection.

b. (Plate V fig. 13, third specimen from the bottom).

Very similar to the preceeding, but the ends more pointed. It is contained in a bamboo case decorated in the same way as the case of No. 204. Length 14·7 cm.; breath 1·5 cm.

Catalogue No. 1112. [Pd. xii. 00].

2. Dusun—*Teruding.* (Plate V fig. 13 bottom specimen, and Plate VII fig. 9).

Made of *apeng* wood. It differs from the Sea-Dyak *ruding* in the following points :— i.) the back of the instrument is not concave; ii.) one end is produced to form a handle almost square in section ; iii.) one half of the frame is shaved down so as to be very thin, the other half is comparatively thick ; iv.) in order to give a greater range of vibration to the tongue a lump of dammar is attached to it about its middle ; the peculiar shape of the tongue is shown in Plate VII fig. 9.

The cuticle of the wood is left on the handle, as a narrow transverse strip across the middle of the instrument and on the end opposite to the handle, where there also occurs a small dab of resin. The instrument is enclosed in a small bamboo case decorated with incised geometrical designs.

Length 13 cm. ; breadth 0·8 cm.

Catalogue No. 777. From Kiou, Mt. Kina Balu.

Drs. G. D. & H. A. Haviland coll. iv. 92 [P].

Ling-Roth (l. c. Vol. II p. 257) figures a similar example.

3. Land-Dyak—*Stobeong.*

a. (Plate V fig. 13 top specimen).

Jews-harp of brass. The tongue (*jorah*) and frame (*bak*) are very thin and quite flat, one end is produced to form a slightly thicker handle (*kopwong*) the opposite end is shaped and notched. The handle is well-marked off from the frame. The tongue has been smeared with lime in order to make it heavier and so to tune the instrument in accord with others.

Length 9·3 cm. greatest breath 1 cm.

Catalogue No. 1273. From Teringoo, Sarawak River.

E. W. Byrde, Esq., [P. 23. vi. 03].

b. (Plate V fig. 13 second specimen from the top).

Almost exactly similar to the preceding specimen, but end opposite to the handle cut square.

Length 9·2 cm. ; greatest breadth 1 cm.

Catalogue No. From Krokong village. Upper Sarawak. [E. W. Byrde, Esq. P. vii. 03].

The Land-Dyaks of Quop call this instrument *traing*; the Land-Dyaks of the Upper Sadong call it *jingun.*

These instruments are made very carefully and the owner of a good specimen will not readily part with it. If the tongue, when just cut out from the frame, does not vibrate properly it is carefully filed with the cuticle of a species of bamboo and until it vibrates freely the instrument is said to have no " life " or " soul. " At Krokong several men will play jews-harps in concert tuning them by smearing lime on to the vibrating tongues.

4. Sea-Dyak—*Engsulu* or *Ruding sulu.*

a. (Plate VI fig. 13 middle specimen).

Jews-harp of brass ; markedly concavo-convex longitudinally, suggesting that it is derived from a wooden model. The tongue tapers to its end. One end of the frame is cut out into three points, the other end is bifurcated, and the two limbs of the bifurcation are rolled up into spirals ; a loop of string passes through a hole at this end, a short string with a brass toggle attached to it passes through a hole at the other end.

Length 9 cm. ; breadth 0·8 cm.

Catalogue No. 1251. From Lobok Antu, Batang Lupar. [R. Shelford, Esq. P. 5. iv. 03]

b. (Plate V fig. 13 third specimen from the top).

Differs from the preceeding specimen in being nearly flat; one end is produced to form a sort of handle but it is quite thin and flat and is fretted and cut into a pseudo-phyllomorphic pattern. The opposite end of the instrument is "stepped" and a string with a bamboo toggle is passed through a hole here. The tongue does not taper, its proximal half is twice as thick as the distal (cf. *ruding*).

Length 10·1 cm.; greatest breadth, 0·8 cm.

Catalogue No. 610. Brooke Low collection.

Ling Roth (l. c. Vol. II p. 257) figures a handled brass jews-harp but with a string attached to the frame; it is evidently a Sea-Dyak *engsulu* but it has been wrongly named *rodiung.*

This is one of the musical instruments which Dyaks say are possessed of "*Jako*" i. e. articulate speech; the *enserunai* is another but the *ruding* is not. The *engsulu* is played by young men and girls who are lovers; a young man desirous of marrying a girl will, previous to matrimony, visit at night his *inamorata* in her mosquito curtains and will play to her on his jews-harp, she will reply on her jews-harp and it is said that the notes of the instruments can be translated by experts into articulate language in the form of a poem.

PERCUSSION INSTRUMENTS.

I. Wooden resonators and harmonicums.
II. Metal gongs.
III. Bells.
IV. Drums.

CLASS I.—WOODEN RESONATORS AND HARMONICUMS.

These have been superseded almost every where by metal gongs made for the most part in Java and China.

1. Land-Dyak—*Lalipok.* (Plate VI fig. 14).

These are merely portions of a bamboo joint with the wall scraped quite thin, one end is closed by the septum the other is open. The open end is knocked against some hard substance such as an ironwood post. They are played in accompaniment with the *ton-ton* (cf. antea p. 17). Length 24·2 cm. and 37 cm. diam. 5 cm. and 5 cm.

Catalogue Nos. 1297 *a* and *b*. [Pd. ix. 03.] From the Upper Sadong District.

2. Land-Dyak—*Pelonchong.* (Plate VI fig. 14).

Two pieces of bamboo joints, the walls not scraped thin but with a hole cut in one side; one end is closed by the septum the other is open. The instruments are beaten with a short stick to accompany the *ton-ton.* Length 49 cm. and 43 cm. diam 5 cm. and 5.2 cm.

Catalogue Nos. 1298 *a* and *b.* [Pd. ix. 03]. From the Upper Sadong district.

3. Land-Dyak—*Krotong*—Wooden harmonicum.

A set of six slabs of hard red wood (*mellobi*) ranging in length from 49 centim. to 40 centim., in breadth from 7 centim. to 5 centim., in thickness from 3·5 centim. to 1·5 centim. The notes emitted when the slabs are struck do not form a regular scale. Three slabs (*anak*) are marked at one end with a streak of white paint and these give higher notes than the three others (*endor*) which are marked with a cross. The slabs are laid on a block of soft wood or on the legs of the performer and are tapped with two sticks (*bokan*); sometimes two men play, one striking the *anak* the other the *endor*.

Catalogue No. 1280. E. W. Byrde, Esq. [P. 9. vii. 02].

This example was made at Krokong, Upper Sarawak, and was in use for many years at feasts and funerals. Brooke Low mentions similar specimens, but made also of stone in use amongst the Sea-Dyaks. Burbidge gives an account of a Kadyan "triangle or its music rather, being represented by two or three steel hatched leads which were laid across laths on the floor and beaten in time with a bit of iron" (cf. Ling-Roth l.c. Vol. II p. 263).

4. Maloh—*Tengkuang*—(Plate IV fig. 11, left-hand specimen).

A long narrow rectangular block of *tapang* wood with a scroll handle projecting from the left-hand end (upper end in the figure). It is narrower at the top (right-hand side in the figure) than at the bottom, the sides sloping in from a line just below the middle line. A deep longitudinal cavity is scooped out of the block of wood; it slopes up at either end. On one side (that seen in the figure) there is at either end a perpendicular border of of phyllomorphic design carved in deep relief whilst a broad horizontal border of incised phyllomorphic design runs along the lower half of the instrument; on the other side the two perpendicular borders consist of incised lines bounding a series of diamond shaped figures, the horizontal border is similar to that on the other side.

There are two drum sticks also of *tapang* (*Abauria excelsa*) wood ; each is bored at the top with a hole and they were once joined together by a length of string ; they are slightly decorated with incised lines but the patterns which it was intended to form have never been completed. Length 61 cm. ; breadth at top 7·5 cm, ; breadth at bottom 11 cm. ; height 22 cm. ; length of stick 24 cm.

Catalogue No. 57. Brooke Low collection.

The instrument has been figured by Ling-Roth (l. c. Vol. II p. 263.) A large block of wood shaped like a pig and hollowed out, hangs by the antimony works of the Borneo Co., at Busau, Upper Sarawak ; it is beaten to call the men to work and emits a very loud resonant sound ; it was made by a Malay.

CLASS II—METAL GONGS.

From a native point of view these are the most important of all musical instruments. Formerly certain varieties of gongs were in universal use as currency and at the present day fines levied on natives by the Sarawak Government are paid in many cases in gongs, brass ware, and old jars. The large heavy gongs known as *tawaks* are worth any thing from $30 to $100, not only their weight but their tone and resonance being taken into account by the appraisers. The wealth of a chief consists chiefly of gongs and jars, and his collection of the former, is if he is in prosperous circumstances, always increasing. They are played at ceremonies and festivals of every description and the noise produced by the beating of twenty or thirty gongs all at the same time can be better imagined than described. The Land-Dyaks of Quop have definite names for the different rhythms with which a series of gongs can be beaten and I have no doubt that the same is the case amongst other tribes.

The four principal varieties of gongs are:—

1. *Gongs* proper ; large shallow gongs with flat boss or none at all.

2. *Tawak*; large deep gongs with hemispherical boss.

3. *Chanang*; medium sized gongs with hemispherical boss, sometimes elaborately ornamented.

4. *Kromong*; small gongs with hemispherical boss, always sold in sets of seven or eight and played somewhat like a chime of bells.

All are made of brass and most are cast by a *cire perdue* process, though the older and more valuable ones have been melted and hammered into shape.

The place of origin of some specimens is extremely doubtful, but generally speaking the following may be regarded as fairly accurate :—*Gongs* proper come from China, their value is small and but few are bought by Dyaks and other natives; *Tawak* are made in Java and perhaps by Malohs, as already noted their value is considerable; *Chanang* are made in Java, in Kuching by Sarawak Malays, and in Brunei by Brunei Malays, the latter being usually highly ornamental and worth $15 to $25, a Javanese *Chanang* may fetch a very high price; *Kromong* were formerly made in Java but all modern specimens are made chiefly in Kuching by Sarawak Malays, modern specimens are moderate in price.

1. *Gong*. (Plate IV. fig. 12, specimen in the background) large shallow gong of (?) Chinese origin, with a flattened boss. Diam. 66 cm.; depth 8 cm.

Catalogue No. 1225. [Pd. xi. 02].

2. *Tawak* or *tetawak*. Large brass gong, said to have been made by Malohs, with large hemispherical boss and slightly raised central area. It is very deep and the sides slope in from front to back. It has been cast and then hammered. Diam. in front 60 cm.; at back 45 cm.; depth 27 cm.; thickness 0·5 cm.; weight 37 lbs.

Catalogue No. 1256. The Sarawak Government. [P. 14. iii. 03].

This specimen some years ago was deposited in Sibu fort as a plėdge of good faith by a native chief but it was never redeemed ; it has been valued by Malays at $70.

3. Brunei Malay—*Chanang naga.* (Plate VI· fig. 15).

Brass gong with hemispherical boss; the face is decorated with two dragons in bold relief and with a geometric pattern round the border and between the dragons in lower relief, the side is also ornamented with a geometric pattern in low relief. The gong is suspended by a chain with two diverging limbs, one of the links in the middle of each divering limb is cast in the form of a bird and the junction of the diverging limbs with the main chain is marked by a similar but larger link. Diam. in front 49 cm. at back 39·4 cm.; depth 12 cm. Total length of chain 58 cm.; of diverging limbs 35 cm.

Catalogue No. 1268. [Pd. ii. vi. 03].

These gongs are cast by a *cire-perdue* process; a rough model of the gong is first made in wood, over this is spread a layer of wax the surface of which is carved and tooled into the desired pattern, the wax is lifted off the wooden model in two pieces—the front and the side,—these are then joined and backed with more wax, and a mould of clay mixed with sand is built up so as to completely enclose the wax pattern, a small spout being left at one point; the whole is then burnt in a kiln and the melted wax is poured out of the spout of the clay mould and the molten brass poured into it. A new wax pattern has of course, to be made for every gong.

The dragons certainly suggest a Chinese origin for these gongs, still the dragon is also prominent in Indonesian art so that it would be rash to dogmatize on the subject. The significance of the bird-links in the suspensory chain I have been unable to discover.

4. Sarawak Malay—*Chanang.*

Small brass gong with hemispherical boss and raised central area ; cast by *cire-perdue* process in Kuching. Diam. in front 33·9 cm., at back 30·1 cm. depth 7·8 cm.

Catalogue No. 1208. [Pd. xii. 02].

5. Sarawak Malay—*Kromong*. (Plate IV fig. 12).

A set of eight small brass gongs, each with hemispherical boss and slightly raised central area. They rest on strings fastened to the cross-pieces of a long wooden frame and are struck with two wooden beaters. Diam. of largest gong 19·6 cm., of smallest gong 17·8 cm.; all are 6·5—6 cm. deep.

Catalogue No. 1209. [Pd. xii. 02].

These *Kromong* were cast in Kuching. The process is much the same as that previously described; the wax is spread thinly over a wooden model (*chuan*) pitted all over with small depressions, the purpose of which is to give an appearance of hammer-marks; the old Javanese *Kromong* were all melted and beaten into shape and distinctly shewed the hammer-marks all over their surface, and the same appearance is simulated in the modern article. The wax is peeled off the wooden model as already described and enclosed in a mould of clay mixed with sand (*tanah balut*) with a spout for the exit of the melted wax and the entry of the molten brass When the gongs are removed from their clay moulds they are roughly smoothed down with a file and are set in a row on a frame like that shewn in the figure, the maker then tunes them by tapping them with a hammer and finally blackens them with a mixture of copper sulphate and an extract of *lirang* a plant used also medicinally for skin diseases.

CLASS III. BELLS.

1. Brunei Malay—*Grunong*, cow-bell.

A spheroidal brass rattle flattened from side to side, cast in brass, hollow with a slit running half way round the lower border; the handle of the rattle is in the form of a bird with a ring springing from its back, on each side of the rattle is a snake in bold relief and an outstanding ring; there is a ring just above each end of the slit running round the lower border of the rattle. A small brass sphere inside the hollow of the rattle acts as a clapper.

Length (in a straight line) 9·8 cm.; diam. 6·1 cm. × 4·8 cm. [Pd 6. xi. 02.]

Catalogue No. 1187.

This is the only form of bell that I have met with in Borneo with the exception of small metal rattles that are worn as ornaments (trimmings to kirtles, buttons to necklets, etc.)

CLASS IV. DRUMS.

These are used by every tribe in Borneo; they are played with gongs at feasts and funerals.

1. Land-Dyak (Bukar sub-tribe.)—*Gehong.*

Single membrane drum made from one and a half joints of a very large species of bamboo; the intervening septum is broken through; one end is open, the other is closed by a diaphragm of monkey's skin (*Macacus nemestrinus*), secured by rattan in the manner shewn in fig. 1, Plate VII., the loops of rattan however being connected by a transverse double twist of rattan. Height 84 cm.; diam. 12 cm.

Catalogue No. 1294. [Pd. viij. 03].

From Lanchang, Upper Sadong.

I noted in the rafters of the head-house (*baluh*) at Lanchang village, a very large drum known as *sabang* cut out from a tree trunk, it was at least 5 feet high and 1 foot in diameter, but I was unable to secure it for the Sarawak Museum as it was used only at head-feasts and was regarded as "*pemali.*" Similar gigantic drums are used at Krokong, Upper Sarawak.

2. Sea-Dyak—*Gendang.* (Plate III fig. 10, left hand specimen).

Single membrane drum made of a hard black wood, roughly shaped like an hour-glass, hollow throughout, the cavity in shape corresponding to the external form; the lower end is open, the upper is closed by a skin diaphragm secured by rattan lashings and loops; the method of lashing the diaphragm on to the drum-head is slightly different from the usual method and is shown on Plate VIII fig. 14, the edge of the diaphragm is not doubled over, the rattan loops pass alternately over and under the encircling band *a* and then down to and round a plaited rattan band which is prevented from slipping by wedges. Below the plaited rattan band is a raised zone on which is carved in bold relief the following patterns :—

1.) A conventional flower *buah andu*, (*Plukenetia corniculata*).

2.) On each side of this a rough geometrical design, three scrolls in a square.

3.) An intertwisted double loop pattern, *ensilup* (i. e. interlocking).

Twelve shirt buttons are let into the centre of (1), two are let into each scroll of (2) and there is one in each loop of (3). Below this zone is a circle of incised triangles, *puchok rebong* (i.e. young shoots of bamboo) and round the foot of the drum runs an incised single loop pattern. Height 18 cm. ; diam. at top 13·4 cm. ; diam. at bottom 20 cm.

Catalogue No. 58. Brooke Low collection.

The Sea-Dyaks of the Balau River and the Sibuyaus call this instrument *Ketubong*. I have seen specimens with a diaphragm of *Varanus* skin. The performers on this instrument and the Land-Dyak *Gehong* sat cross-legged on the ground, the drum lying across one thigh and kept from slipping by the opposite foot, and the diaphragm was beaten with the tips of the fingers and the palmar surface of one hand.

A Murut *gendang* is figured by Ling Roth (l. c. Vol. II p. 263).

3. Malay—*Gendang prang*.

(Plate III fig. 10, right hand specimen).

Double membrane drum formerly used in warfare, but now employed at festivals. It is almost cylindrical, hollow throughout and made of *mirabou* wood (*Afzelia bijuga*), it is slightly narrower in diameter at one end than at the other and its greatest diameter is across the middle. Both ends are closed with diaphragms of parchment, secured in the following manner :—the edge of the parchment is gripped between two strips of split rattan encircling the drum, these gripping bands are given a half-turn up, a continuous loop of split rattan is laced through holes in the double fold of parchment (formed by turning up the gripping bands) and passes to the other end of the drum to be similarly laced through holes in the diaphragm there ; the adjacent limbs of the loops are braced together by bands of plaited rattan (Plate VIII fig. 15). A small square hole is cut in the side of the drum to increase the resonance and a string sling passes through holes above and below this. Height 53 cm.; diam. at one end 22 cm. ; diam. at the other 20 cm.

Catalogue No. 1227. [Pd. 29. 1. 03].

eleven

4. Malay—*Gendang rebana.* (Plate IV fig. II right hand specimen.)

Bowl-shaped drum of *mirabou* wood, the top is closed by a diaphragm of sheep's skin, the bottom is open. Into the rim of the bottom are driven ten square wooden pegs, their free ends rest on and press against a circle of rattan round which pass the rattan loops that secure the diaphragm ; the chief function of this rattan circle and pegs is to act as an insulator, raising the drum from the ground and so increasing its resonance. The diaphragm is secured in the same way as shewn in Plate VII. fig. 1. except that the descending loops of rattan are in ten groups of four or five loops, any one group being widely separated from that on either side of it ; there are ten such groups and they correspond with the ten wooden pegs in the bottom rim of the drum ; further, the edge of the diaphragm is doubled back to cover the rattan lacing and this is kept in position by a single encircling rattan laced through it.

Immediately before use the diaphragm is tightened by pushing between it and the upper rim of the drum from the inside a circle of thick unsplit rattan, known as the *sidak* ; when the drum is not in use the *sidak* is kept coiled up inside the drum.

Height 18 cm.; diam. at top, 44·5 cm.; diam. at bottom 24·8 cm.

Catalogue No. 1246. [Pd. 28. 1. 03].

Addenda.

Since going to press my friend Mr. W. Howell has sent to the Museum a toy musical instrument used by Sea-Dyak children; as it is so very different from every other form of musical instrument found in Borneo, I cannot refrain from adding a brief description of it:—

Sea-Dyak—*Sulieng*—toy "squeaker."

A piece of the stem of a species of *Calamus* known as *Kerniong*, 21 centim. long and 1 centim. in diameter; one end is open and cut square, the other is closed by the natural septum, a very narrow crack runs down the whole length of the instrument on one side, in fact it is so narrow as to be hardly perceptible from the outside. A blast of air driven into the tube just forces apart the sides of the crack, but they quickly close again by virtue of their elasticity and curvature. If the pressure of air is maintained they are forced open again, close again and so on; in other words the sides of the tube bordering the crack vibrate and constitute a "partial" valve through which the air issues in a pulsatory manner producing a loud and penetrating squeak. The instrument may be compared with the trumpet class though in that class the lips of the performer constitute the "partial" valve, not the walls of the instrument itself. Malays know this instrument as *seruné*, the same term as that employed by Land-Dyaks of the Bukar sub-tribe for their pipes with "beating" reeds.

Catalogue No. 1363. Rev. W. Howell [P. 6. xij. 03].

The wooden clappers used by Sea-Dyaks are also worthy of note. These instruments, which are known variously as *tongkat be-igi*, *tangkat krutak*, *tugal be-igi*, *tugal bekurong*, and *tugal klek*, are long staves of hard wood with an enlarged head, the head is hollowed out but a loose block of wood occupies part of the hollow and slides up and down when the staff is shaken; this block is cut out of the head itself, the hollowing of the head and the freeing of the block being negotiated through four longitudinal slits in the head. The staffs are used as padi-dibblers, and they are carried and sounded at intervals by the principal celebrant at that part of the religious festivals when the *Mengap* is being recited; they are also carried and rattled by any one when walking in the dark to give notice of his coming to spirits, men and animals.

Sea-Dyak—*Tongkat krutak.*

a. A long staff of hard wood, the lower end thickened and pointed and with an enlarged four-sided head 40·5. centim long; the angles of the head are marked by wide slits, through which the head has been hollowed out, a sliding block of wood 20 centim. long being left in the hollow. The passage of the stem of the staff into the head is sudden and is marked by a little carving and a narrow band of plaited rattan; the top of the head is crowned with a finical and a tuft of grass.

Total length 239 cm.

From the Krian River. I. Kirpkatrick, Esq. [P. 28. xiii. 96.]

Catalogue No. 999.

b. A similar specimen, but the lower end is much thicker and less pointed; the head is round in transverse section and the hollowing of it and the freeing of the sliding block has been conducted through three slits only; the rest of the staff instead of being of equal diameter throughout is marked with seven circular blunt ridges at unequal distances apart; the passage of the stem into the head is very gradual; the head has a long carved finical but no tuft of grass.

Total legth 262 cm.; length of head 36·5 cm.; of sliding block 23·5. cm. From the Lamanak River. Brooke Low collection.

Catalogue No. 517.

c. Much shorter specimen, the head rather slender and without a finical, which is replaced by a stout projection; the staff is encircled by several narrow ridges some of which are carved to imitate the nodes of bamboo; there are four slits in the head.

Total length 193 cm.; length of head 38 cm.; of sliding block 12·4 cm. From the Engkari River. Brooke Low collection.

Catalogue No. 518.

Explanation of Plates I.—VI.

Fig. 1. Two Tanjong *busoi* and *aran*, musical bows.
Fig. 2. Sea-Dyak *enserunai*, fiddles.
Fig. 3. Maloh *blikan*, two-stringed guitar.
Fig. 4. Kyan *sapeh*, two-stringed guitar.
Fig. 5. Malay *gambus*, six-stringed guitar.
Fig. 6. Murut and Sea-Dyak *engkratong*, upright-harps.
Fig. 7. Dusun Long Kiput and Kanowit bamboo-harps.
Fig. 8. Murut Kanowit and Sea-Dyak bamboo flutes.
Fig. 9. Sea-Dyak and Kyan mouth organs.
Fig. 10. Sea-Dyak and Malay *gendang*, drums.
Fig. 11. Maloh wooden gong and Malay drum.
Fig. 12. Malay playing on a set of *kromong*, a large *gong* in the back ground.
Fig. 13. Dusun Land-Dyak and Sea-Dyak jew's-harps.
Fig. 14. Land-Dyak *ton-ton*, bamboo-harps, *lalipok* and *pelonchong*, bamboo resonators.
Fig. 15. Brunei Malay *chanang naga*, ornamental gong with suspensory chain.

Explanation of Plate VII.

Fig. 1. Diagram illustrating the method by which a skin diaphragm is fastened over a resonator of a fiddle or over a drum. The skin is tightly stretched over the mouth of the resonator and tied with a string (*a*), the edge of the skin is then turned up and through the double fold so formed is laced a continuous loop of split rattan (*b*); the lower ends of the loops pass

round a band of plaited rattan (*c*) encircling the resonator at the lower level; wedges (*d*) are driven between this band and the resonator to make all taut.

This method of securing drum-heads and diaphragms is common all through the Malay Archipelago: I have seen a drum from Timor in the Raffles Museum, Singapore, the diaphragms of which are fastened in identically the same way as this.

Fig. 2. Portion of head of stem of Sea-Dyak *enserunai* showing method of attachment of string. (cf. p. 7)
Fig. 3. ditto. (cf. p. 7)
Fig. 4. ditto. (cf. p. 9)
Fig. 5. Portion of stem of Maloh *blikan* (cf. p. 12)
Fig. 6. Dusun guitar × $\frac{1}{8}$ (cf. p. 11)
Fig. 7. Land-Dyak *sigittuad* × $\frac{1}{6}$ (cf. p. 9)
Fig. 8. Sea-Dyak *penyipu*, clay whistle × $\frac{1}{2}$ (cf. p. 33)
Fig. 9. Dusun *teruding*, bamboo jew's harp, seen in profile with the tongue elevated. Nat. size. (cf. p. 43)
Fig. 10. Bamboo "reeds" of a Kyan mouth-organ. Seen in face and in profile.

Explanation of Plate VIII.

Fig. 1. Proximal end of Sea-Dyak *sulieng san*-transverse flute (semidiagrammatic).
Fig. 2. Proximal end of a nose-flute (semi-diagrammatic.)
Fig. 3. Proximal end of Sea-Dyak *sulieng nyawa*. Flageolet with outside duct (semidiagrammatic).
Fig. 4. Proximal end of Land-Dyak *telarli*. Flageolet with outside duct (semidiagrammatic).
Fig. 5. Diagrammatic longitudinal section of above. *a*. sound-hole.
Fig. 6. Proximal end of Land-Dyak *kroto*. Flageolet with outside duct (semi-diagrammatic).
Fig. 7. Proximal end of Murut flageolet with outside duct (semidiagrammatic) *a*, luting of dammar; *b*, fragment of leaf stuck on the edge of the sound-hole.

Fig. 8. Diagrammatic longitudinal section of above.

Fig. 9. Kyan *bulo wok*, bird-call $\times \frac{1}{2}$

Fig. 10. Diagrammatic longitudinal section of Sea-Dyak *bumbun.* bird-call, *a.* bamboo tube; *b.* wooden upright; *c.* septum of bamboo joint; *d.* sound-hole.

Fig. 11. Proximal end of Sea-Dyak *sulieng nyawa.* Flageolet with inside duct. (semidiagrammatic).

Fig. 12. Diagrammatic longitudinal section of above.

Fig. 13. Land-Dyak *serubayi*, pipes with 'beating' reeds. $\times \frac{3}{4}$.

Fig. 14. Method of attachment of diaphragm in Sea-Dyak *gendang* (cf. p. 50) — diagrammatic. *a.* encircling band of rattan.

Fig. 15. Method of attachment of diaphragms in Malay *gendang prang* (cf. p. 51) — diagrammatic. *aa.* gripping bands of rattan. The limbs, *bb.* of the loops are braced together by bands of plaited rattan not shewn in the drawing.

Addenda II.

A very simple form of wind-instrument was quite recently presented to the Sarawak Museum and is briefly described below:—

Land-Dyak—*bashi.*

This is a length of a large species of bamboo with a large circular hole cut in each internode (seven in number), the holes facing different directions. The instrument is fastened at the top of a high tree and the wind blowing across one, or perhaps more, of the holes makes a loud howling noise.

From the village of Quop.

Total length 311·5 cm.; diameter 5·7 cm.

Rev. F. W. Nichols [P]

Catalogue No. 1384.

Sometimes rather a different instrument is in use; one internode only of bamboo is employed and a large hole is cut in it, the internode spins (vertically) on a pivot and is fitted with a vane so that the sound-hole is always turned at the right angle to the wind from whatever direction it may blow.

The bull-roarer can hardly be omitted from a catalogue of musical instruments, even though the specimen described below was used, like the bull-roarers of the Malay Peninsula, merely as a scarecrow. A popular account of the bull-roarer is given by Dr. A. C. Haddon in his book "The Study of Man" pp. 277-327 and some remarks on the relationship between the bull-roarer and other wind-instruments are given by Mr. H. Balfour in a recent number of the Journal of the Anthropological Institute (Vol. XXXII. pp. 173, 174.)

Narom—bull-roarer.

A flat piece of wood shaped something like a spear-head, 27·2 cm. × 6·1 cm.; both ends are sharply pointed, but at one end are two projecting "ears," a string passes through a hole at this end and serves to attach the piece of wood to a wooden stick, 85 cm. long.

D. A. Owen Esq. [P. 24. v. 01].

Catalogue No. 1121.

Dr. C. Hose first discovered the bull-roarer in Borneo in a Kenyah house up the Tinjar River, Baram district and was told that it was used to scare birds off the *padi* fields; Dr. Hose bought the unique specimen and subsquently showed it to some Narom, a tribe living near Claudetown, Baram River; the Narom stated that they were well acquainted with the instrument and frequently used it; they made several specimens to order, one of which is that described above. The Narom constitute a tribe that falls into the Kalamantan division according to Drs. Haddon and Hose—and so may be considered as amongst the most primitive tribes of Borneo.

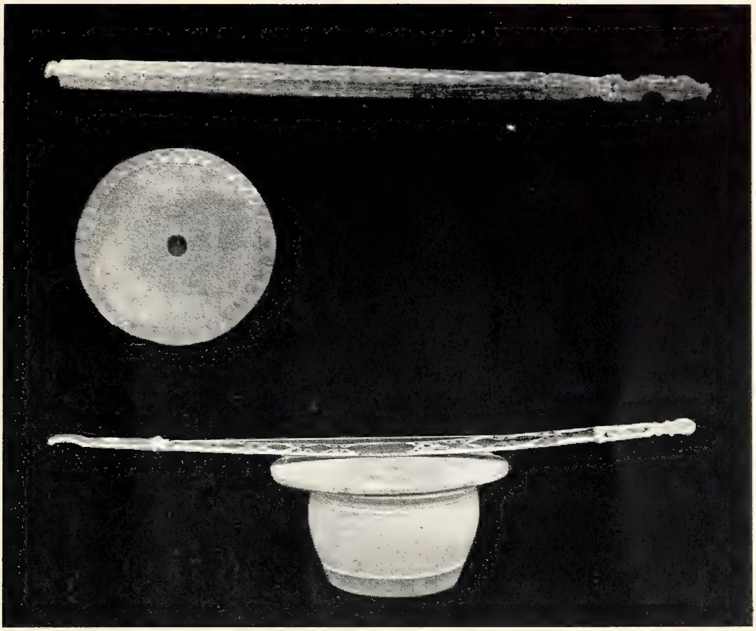
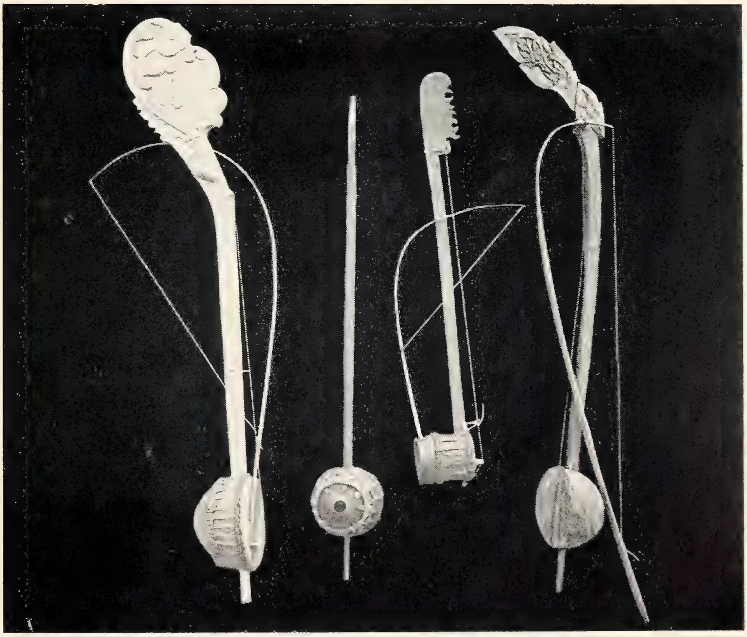


Fig. 1.



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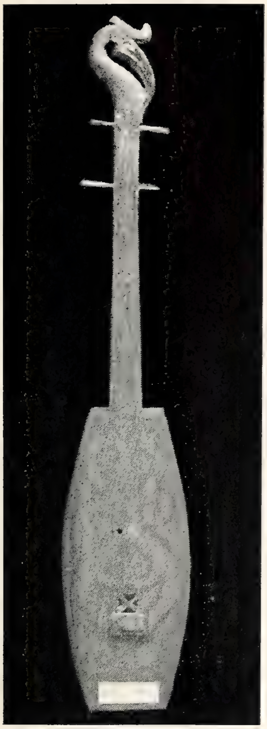

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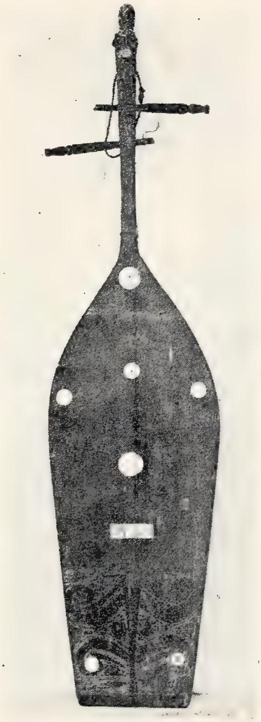

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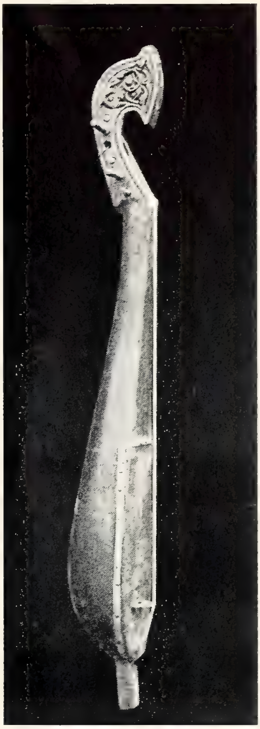

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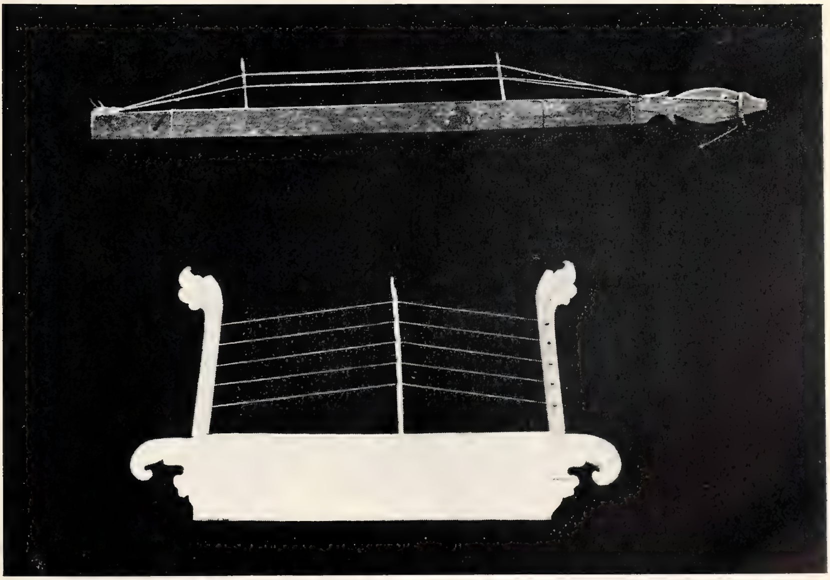

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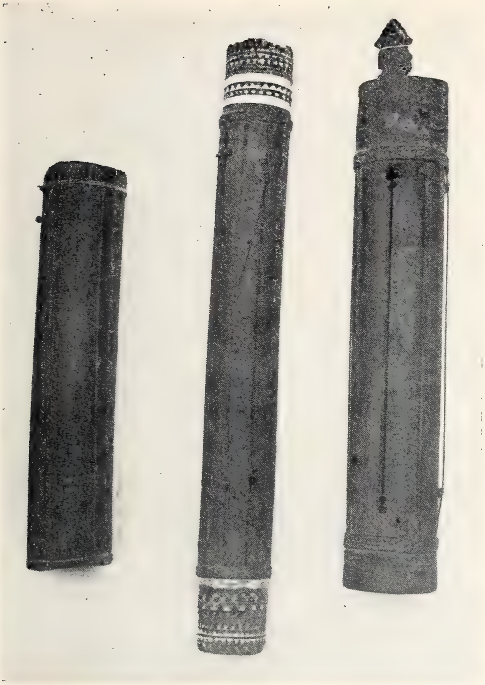

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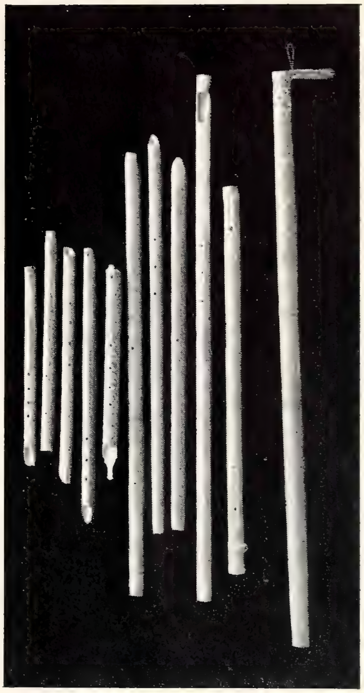


Fig. 8.

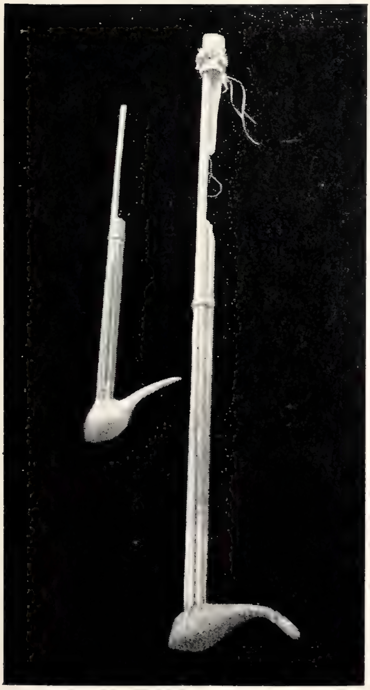


Fig. 9.

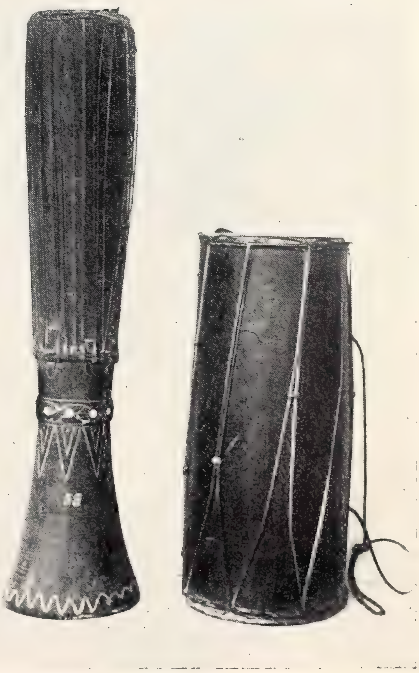
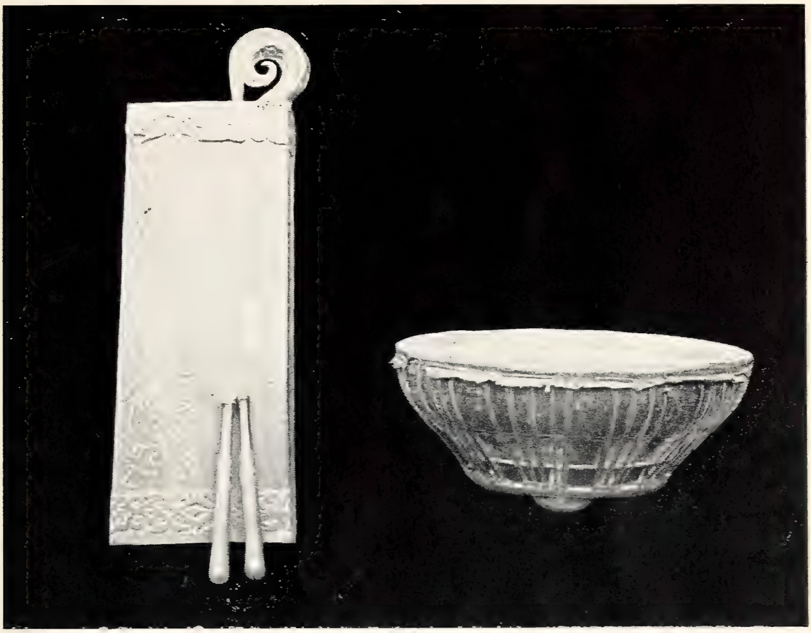


Fig. 10.



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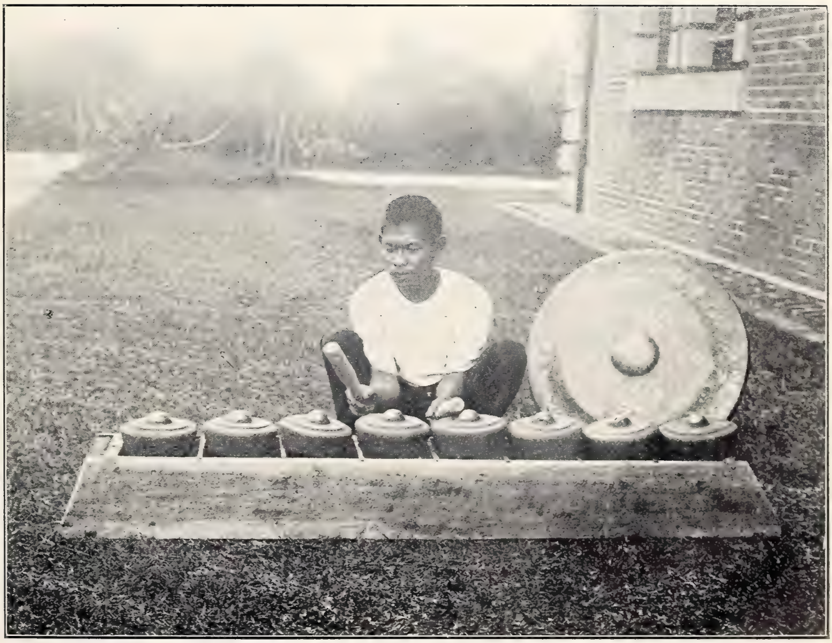

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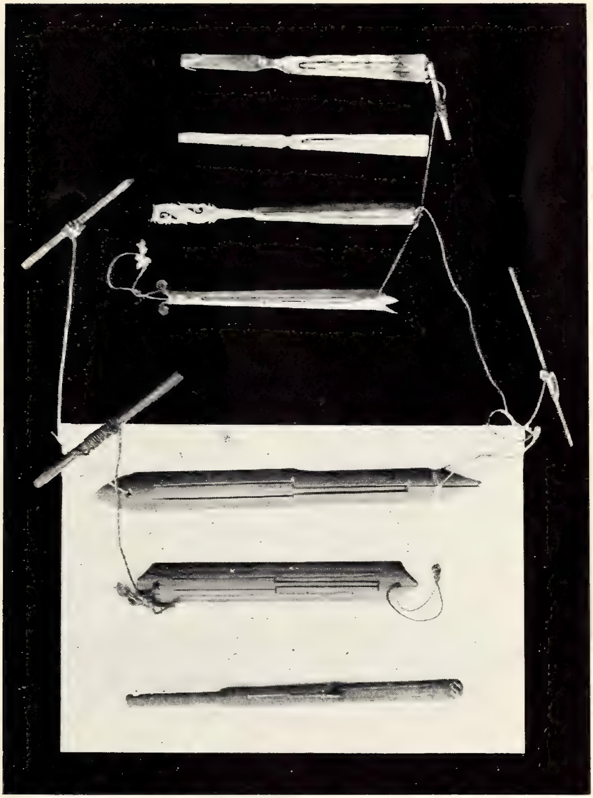

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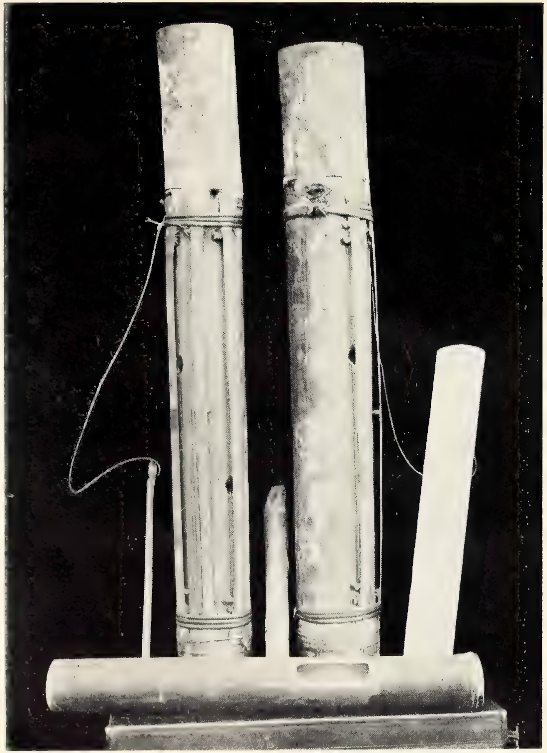


Fig. 14

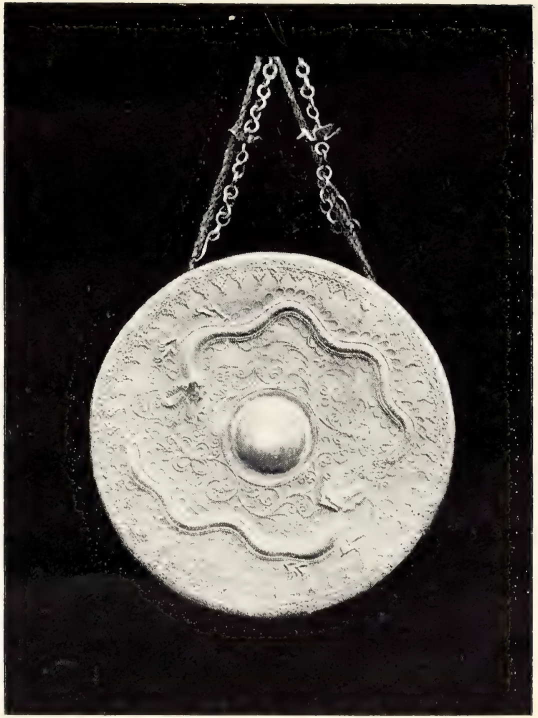


Fig. 15.

Plate VII

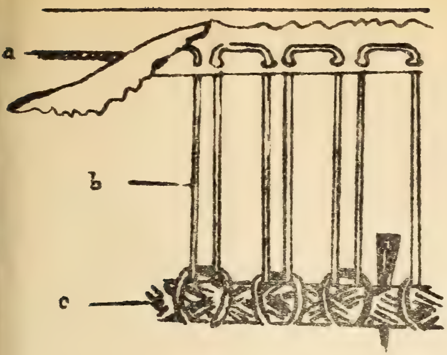


Fig 1

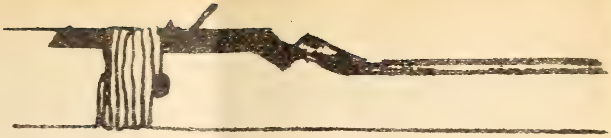
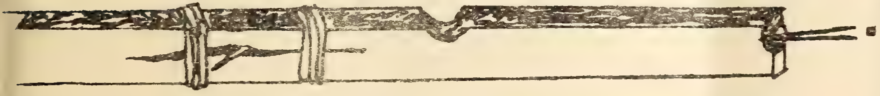


Fig 2



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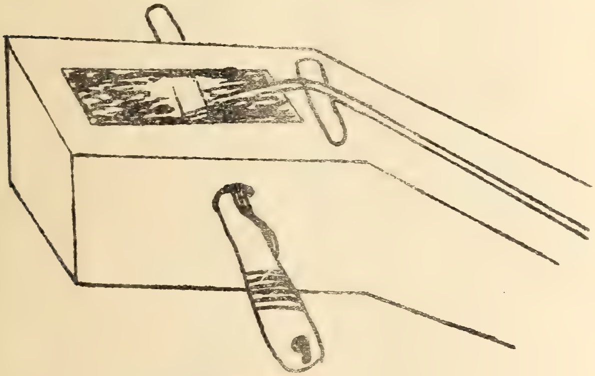

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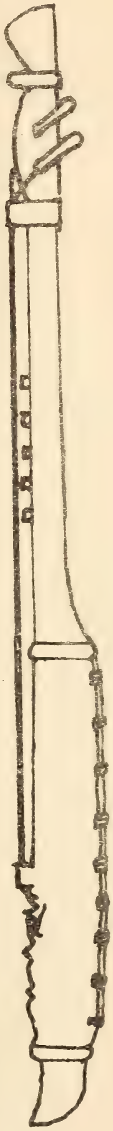

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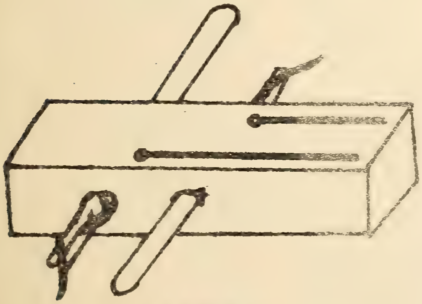

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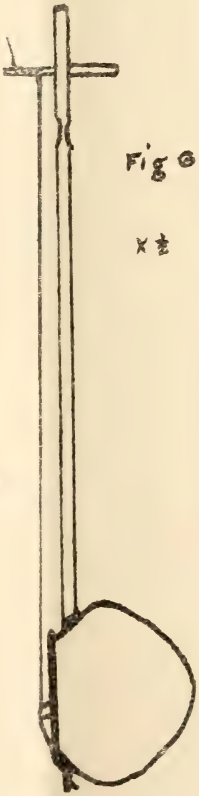

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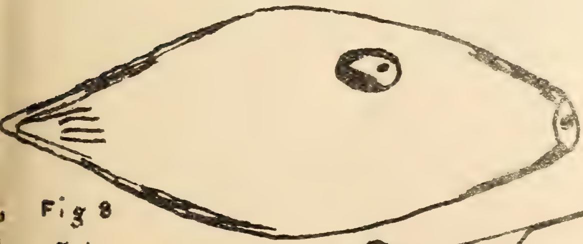

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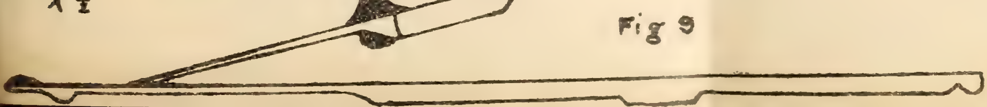

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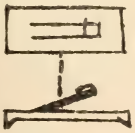

Fig 10

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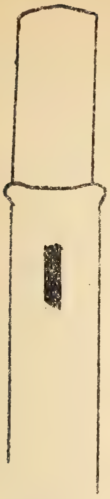

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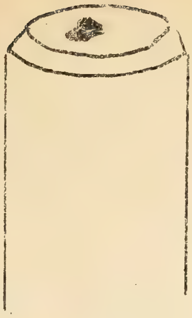

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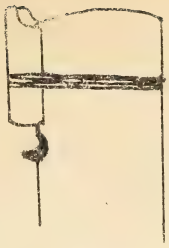

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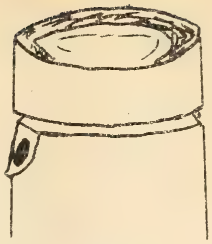

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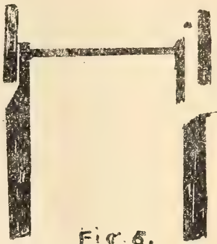

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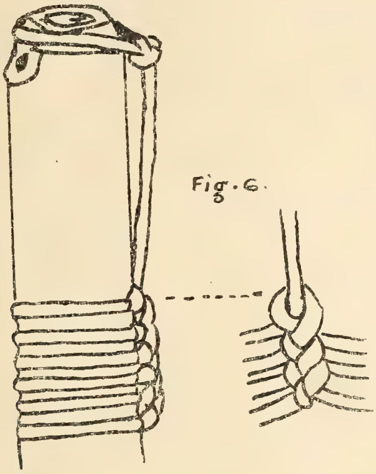

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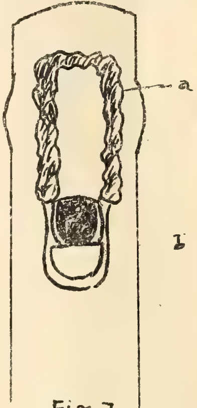

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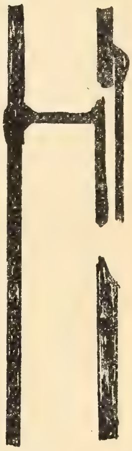

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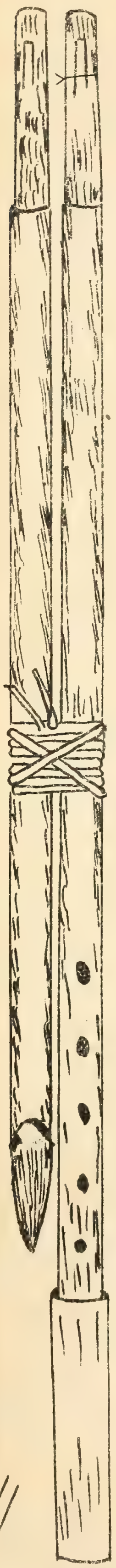

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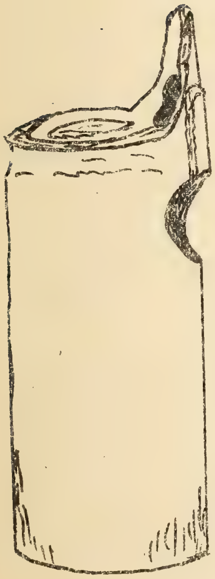

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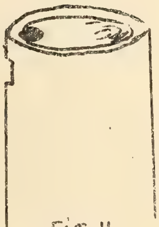

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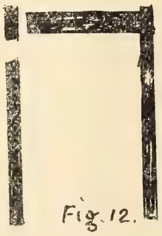

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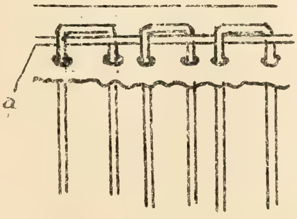

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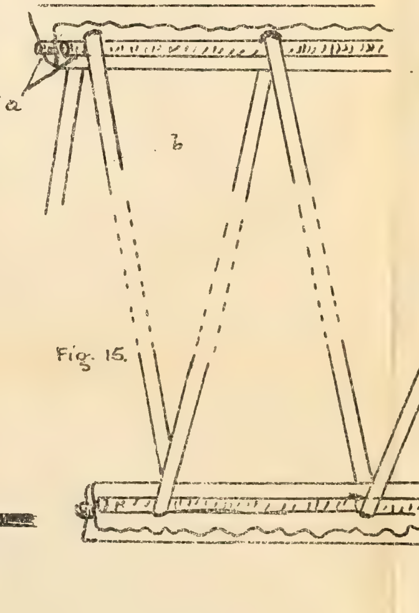

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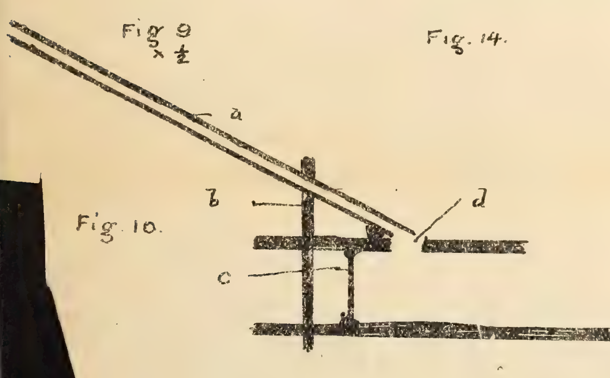

Fig. 10.

R. S. Del.

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STRAITS BRANCH
ROYAL ASIATIC SOCIETY

[No. 41]

JOURNAL

January, 1904

230986

Agents of the Society

London: Kegan Paul, Trench, Trübner & Co.

PRINTED AT THE AMERICAN MISSION PRESS SINGAPORE.

[No. 41]

JOURNAL
# of the
Straits Branch
# of the
Royal Asiatic Society

JANUARY 1904

SINGAPORE:
Printed at the American Mission Press
1904

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THE
STRAITS BRANCH
OF THE
ROYAL ASIATIC SOCIETY.

COUNCIL FOR 1904.

The Right Rev. BISHOP HOSE, *President.*

Hon. C. W. S. KYNNERSLEY, C.M.G., *Vice-President for Singapore.*

Hon. DR. W. C. BROWN, *Vice-President for Penang.*

H. N. RIDLEY, Esq., M.A., *Honorary Secretary.*

DR. R. HANITSCH, *Honorary Treasurer.*

P. J. BURGETS, Esq., M.A.
Hon. W. R. COLLYER, M.A., I.S.O.
H. ESCHKE, Esq.,
REV. W. G. SHELLABEAR,
W. G. ST. CLAIR, Esq.,
Councillors.

PROCEEDINGS

of the

Annual General Meeting

The Annual General Meeting was held on January 19th, 1904.

There were present :—The Right Reverend Bishop HOSE (in the Chair), the Hon'ble C. W. KYNNERSLEY, the Hon'ble W. R. COLLYER, Messrs. W. G. St. CLAIR, A. KNIGHT, H. ESCHKE, C. B. KLOSS, P. J. BURGESS, M. HELLIER, Dr. R. HANITSCH, H. N. RIDLEY.

The minutes of the last General Meeting were read and confirmed.

A letter from Mr. Fleury asking that Lieut.-Colonel G. C. E. van Daalan, might become a subscriber to the Journal was read and the request agreed to.

The election of the new members during the past year was confirmed.

The Annual Report of the Council was laid on the table and on the proposal of Mr. BURGESS seconded by Mr. HELLIER was adopted.

The Chairman suggested that when the Catalogue of the library had been completed, any additions should be recorded in future in the Journal and those of special interest should be recorded in the Annual Report. This was agreed to.

The Treasurer's statement of Accounts, audited by Mr. KNIGHT was laid on the table, and on the motion of Mr. C. B. KLOSS seconded by Mr. HELLIER was adopted.

The Officers and Council for the ensuing year were then elected, viz:

President: Right Reverend Bishop HOSE.
Vice President for Singapore: Hon. C. W. KYNNERSLEY.
Vice President for Penang: Dr. BROWN.
Hon. Secretary: H. N. RIDLEY.
Hon. Treasurer: Dr. HANITSCH.
Councillors: Hon. W. R. COLLYER, H. ESCHKE, W. G. St. CLAIR, P. J. BURGESS, Rev. W. G. SHELLABEAR.

The President reminded the Meeting that the Society had attained its twenty-fifth year of existence, having being founded on November 4th, 1877.

A vote of thanks to the President was proposed by Mr. COLLYER and carried by acclamation, and a vote of thanks to the Secretary and Treasurer was proposed by Mr. KNIGHT which was also carried unanimously.

Annual Report for 1903.

The Council have the pleasure to state that the financial position of the Society continues satisfactory, as may be seen by the Treasurer's Balance Sheet.

The number of members at present is 145, including the following gentlemen elected during the year.

Dr. Abbott,
Mr. Eric Maxwell,
,, George Maxwell,
,, W. H. Craddock,
,, A. H. Burn Murdoch,
,, E. W. Birch,
,, W. Makepeace
,, A. S. Haynes,
Mr. F. C. Marshall,
,, R. D. Hudson,
,, F. W. Douglas,
,, W. S. Gibson,
,, T. C. Hinks,
,, Hon. H. F. Deshon,
,, Rev. H. C. Izard,
,, S. Moorhouse,

They have to express their great regret at the loss by death of Mr. A. W. O'Sullivan, long a member of the Society and at one time the Secretary, and also of Mr. D. H. Wise and Mr. James Driver.

Only one Journal No. 39 was published during the year' but another will be shortly in the hands of the members. An important article by Mr. R. Shelford of Sarawak Museum on the Musical Instruments of Borneo illustrated by a large number of plates will follow as soon as it can be printed.

Referring to the resolution passed at the general meeting last year to procure and publish Malay Manuscripts, the Council desire to state that they have kept the matter in view, but up to the present no Manuscripts considered worthy of publication have as yet been obtained. Two important Manuscripts however have recently been offered to the Society by Mr. George Maxwell, and it is hoped they may appear in the course of this year.

The Library was rearranged and is being catalogued. Many books, journals and pamphlets were received and a number were bound.

During the year a letter was received from the Royal Asiatic Society of Bengal stating that the members of that Society had decided that the members of the Straits Branch of the Royal Asiatic Society should have the right of admission to the Society's meetings whenever they were in Calcutta.

The Society has now attained its twenty-fifth year having been founded on Nov. 4, 1877, and it may be noted that in spite of early prophecies of its soon becoming extinct it has steadily thrived to the present day.

The Treasurer's statement of accounts is appended.

HONORARY TREASURER'S ACCOUNT FOR THE YEAR 1903.

	$	c.	$	c.
Balances brought forward from 1902:—				
Mercantile Bank, Fixed Deposit	2595	54		
Chartered Bank, Fixed Deposit	700	81		
Mercantile Bank, Current Account	348	10		
Chartered Bank, Current Account	58	95		
			3703	40
Receipts in 1903:—				
Subscriptions for 1901	10	...		
do. ,, 1902	50	...		
do. ,, 1903	510	...		
do. ,, 1904	25	...		
do. for Life Membership ...	100	...		
Sale of Journals	310	25		
Sale of Maps	962	21		
Sundry Recoveries ...	3	50		
Bank Interest	120	71	2091	67
			5795	07

	$	c.	$	c.
Payments in 1903:—				
American Mission Press ...	414	50		
Thacker and Spink ...	27	37		
Mounting of Maps and Binding of Books	315	25		
3 New Book-cases, at $85 each	255	...		
Clerk's Salary	93	15		
Peon's Salary	15	...		
Postages and Petties ...	78	24		
			1198	51
Balances carried forward:—				
Mercantile Bank, Fixed Deposit	2700	...		
Chartered Bank, Fixed Deposit	1000	...		
Mercantile Bank, Current Account	549	29		
Chartered Bank, Current Account	347	27	4596	56
			5795	07

Examined and found correct.

A. KNIGHT.

R. HANITSCH,

Honorary Treasurer, Straits Branch, Royal Asiatic Society.

OBITUARY.

Mr. Arthur W. S. O'Sullivan.

Since the date of the last report the Society has had to lament the of Mr. Arthur W. S. O'Sullivan, a member of our Council for several years, and at one time Secretary.

Mr. O'Sullivan was born in 1860 and after a distinguished career at Trinity College, Dublin (scholar and gold medallist), he entered the Straits Settlements Civil Service in 1883.

Throughout his service of twenty years in this Colony he was distinguished as an able hard-working officer and showed a marked talent for languages—he was proficient in Dutch, Tamil, Malay, and more than one dialect of Chinese, which is a record rare amongst Europeans in this climate. He had held the post of Assistant Colonial Secretary for five years and had just been selected by the Colonial Office for the post of Colonial Secretary at Trinidad when he was struck down after a brief illness. Although he was not a frequent contributor to the Journal, the Society has lost in him an intellectual force—a man who took a keen interest in scholarship of every kind. For three years before his death he was engaged in intervals of leisure in the translation of Dr. Snouck Hurgroyjne's Acheen—a valuable and interesting piece of work which will shortly be published at Leiden in Holland.

In endeavoring to open up the wide field of Dutch learning and experience in Netherlands India to English readers, he has set an example for which the Society may well be grateful.

R. N. Bland.

Two Sea-Dyak Legends.

By the REVD. EDWIN H. GOMES, M.A.

There are many fairy tales and legends known to the Sea-Dyaks of the present day. These seem to be handed down, by word of mouth, from generation to generation from ancient times.

These stories may be roughly divided into two classes:—

I. Those which are purely fabulous and related as such, and are simply meant to interest and amuse, and in these respects resemble the fairy tales familiar to us all; and

II. Those which are believed to be perfectly true, and to have actually taken place, and are the traditions respecting their gods and preternatural beings. These form in fact the Mythology of the Dyaks.

To the first class belong a large collection of stories corresponding to the Adventures of Brer Fox and Brer Rabbit. In the Dyak tales, the *Plandok* and the *Kekura* (the mouse deer and the tortoise) act always in concert, and their combined intelligence is victorious over the rest of the animal world. To this class also belong the numerous stories related of *Apai Samumang* the Dyak type of cunning and wiliness—and *Apai Saloi*—the typical Dyak fool.

To the second class belong the many and varied adventures of *Klieng*, the great hero of ancient times, and his wife *Kumang*, the Dyak Venus, as well as the traditions relating to the gods believed in by the Dyaks of the present day. To these must be added certain stories which give a reason for some of the curious customs observed by the Dyaks. The two Dyak Myths which follow belong to this latter class.

I.

Danjai and the Were-Tiger's Sister.

Once upon a time there lived a great Chief named *Danjai.* He was the head of one of the longest Dyak houses that were ever built. It was situated on a hill in the midst of a large plantation of fruit trees. *Danjai* was said to be very rich indeed. He possessed much farming land, many fruit trees, many *Tapang* trees, where the wild bees make their abode, and from which the sweet honey is obtained, and in his room there were many valuable jars of various kinds, and also a large number of brass vessels; for the Dyaks convert their wealth into jars and brassware to hand down to posterity. Every year he obtained a plentiful harvest of paddy much more than he and his family could consume and he had always much paddy for sale, so much so that the news of his wealth travelled to distant lands, and many from afar off would come and buy paddy from him. *Danjai* also possessed many slaves who were ready to help him in his work. All the people in his house had a very high opinion of his judgment, and were ready to obey his decisions, whenever he settled any of their disputes. So great indeed was his reputation for wisdom, that men from distant villages would often consult him and ask his advice when in any difficulty. He had also great fame as a brave warrior, and during expeditions against the enemy, he was the leader of the men of his own village and of many villages around, for all liked to follow such a brave man as *Danjai*, who was sure to lead them to victory. Over the fireplace in his verandah he had, hanging together in a bunch, the dried heads of the enemies whom he himself had killed.

Now this man *Danjai* had a very pretty wife whom he had recently married, but the marriage feast had not been held, because he had not yet obtained a human head from the enemy as a token of his love for her : for this girl was of a good birth and a Chief's daughter and wanted the whole world to learn, when they attended her marriage feast, what a brave man her husband was.

Danjai said to his young wife, "I will hold a meeting of the Chiefs around, and tell them that we must all get our warboats ready, as I intend leading an expedition against the enemy.

I should like to bring you a human head as a token of my love, so that you may not be ashamed of your husband. And as soon as I return, we will have the wedding feast."

And though his wife was sorry that her husband intended leaving her, still she did not oppose his wishes, for she wished him to come back covered with glory.

So a council of war was held, and *Danjai* told the assembled Chiefs what he intended to do, and it was decided that all should begin at once making war-boats, which were to be ready in two months' time.

Danjai assisted by his slaves and followers, had been at work at his boat for several weeks, and it was nearly finished. It was a beautiful boat made out of the trunk of one large tree, and *Danjai* was proud of his work. He was so anxious to finish his boat, that one day he started very early in the morning, before his breakfast was ready, and he asked his wife to bring his food to him later on to the part of the jungle where he was working at his boat.

So Mrs. *Danjai* cooked the food and then ate her own breakfast. Then she made up small bundles of rice and also put together some fish and salt, and placed all in a little basket to take to her husband. She had never been out in the jungle by herself before, but she was not afraid, for her husband had told her the way, and she could hear the sound of his adze as he worked at his boat not very far off. She hung her basket over her left shoulder and, holding her small knife in her right hand, went cheerfully on. Presently she came to the stump of a tree on which was placed a bunch of ripe rambutan fruit. They looked so tempting that she could not help eating some of them, and as they were very nice, she put what remained in her basket, saying to herself, "Perhaps *Danjai* forgot to take these fruits with him and left them here. I will take them to him myself, he will no doubt be glad to eat these ripe fruits after his hard work."

Now there was in that land a Were-Tiger, that was much feared by all who lived around. He had the appearance of a man, but at times would transform himself into a tiger, and then he would attack human beings and carry off their heads as trophies to his own house. But he never attacked any unless they had first done wrong by taking something which belonged to him. So this Were-Tiger would leave tempting fruit by the side of jungle paths, and on the stumps of trees, in the hope that some tired traveller would take and eat them. And if any one ate such fruit, then he or she was doomed to be killed by him that same day. But all knew about him, and though he placed many tempting baits in all parts of the jungle, no one touched his fruit, for all feared the fate which awaited them if they did any such thing. But *Danjai's* wife knew nothing about the Were-Tiger. No one had told her of him, and she had never been out before in the jungle by herself, and she had never been warned not to touch any fruit she might find lying about.

"Oh *Danjai*," she said, as soon as she met her husband, "I am afraid I am rather late. You must be very tired and hungry, working the whole morning at your boat without having had anything to eat. Never mind! Here is your breakfast at last." And she handed the basket which contained his food to her husband.

Now *Danjai* was really very hungry, so he was glad to see his food had arrived. He thanked his wife and at once began to empty the basket.

The first thing he saw was the ripe rambutan fruit at the top, and he asked his wife where she got them from. She told him she had found them on the stump of a tree by the wayside, and she said she thought they had been left there by him. She added with a smile, that they were very good as she had eaten some herself.

Then *Danjai*, brave man though he was, turned pale with fear and anxiety.

"We must not linger here a moment," he said to his wife. "Hungry though I am, I will not eat my food here. We must both hurry home at once. You have taken and eaten fruit belonging to the Were-Tiger, so much feared by all. It is said that whoever touches his fruit will surely die a terrible death: and you are the first person I know who has done so."

Danjai hurriedly gathered together all his tools and told those that were with him of his trouble, and they all started and walked silently back. *Danjai* was wondering how he was to avert the fate which awaited his young wife. She was silent, because she saw her husband was troubled, and she was sorry that she had caused him grief.

As soon as they arrived at the house, *Danjai* sent for all the men round about and told them what had happened, how his wife had taken and eaten the fruit of the Were-Tiger. He begged them all to help to shield her, for the Were-Tiger was sure to have his revenge, and come and take the head of his wife.

So they all prepared themselves for the tiger's visit by sharpening their knives and spears. Some men placed themselves on the roof of the house, others in the verandah. The ladder leading up to the house was also guarded, and so were all parts of the house by which he was likely to force an entrance. As for *Danjai's* wife, they hid her beneath some mats and sheets in the room, and twelve brave men stood round her with their swords drawn, ready to save her life even at the cost of their own.

Just before dark they heard the roar of the tiger in the distance. Though still a long way off, the sound was very terrible to hear, and the men all grasped their swords and spears firmly, for they knew the tiger would soon be upon them.

Once more the tiger's roar sounded, nearer and clearer, and then they heard him crash through the leaf thatch roof and fall into the room. There was a great commotion among the men, but though all tried to kill the animal, none could see him. Soon after they heard a roar of triumph from the tiger outside the house. They lifted up the mats and sheets which covered *Danjai's* wife, and there they saw her headless body! The Were-Tiger had succeeded in his attack, and had carried off the head of his victim!

Loud was the weeping and great the lamentation over her dead body. She was so young to die! And what death could be more terrible than hers whose head had been carried away by her murderer! All in the house mourned her loss for seven days and during that time the house was very quiet, as all lived in their separate rooms, and did not come out into the common verandah to do work or to talk to each other.

The death of his wife grieved *Danjai* very much. But though his grief was great, his desire for revenge was greater still.

Very early on the morning of the next day, *Danjai* started after the tiger. The drops of blood which had fallen could plainly be seen on the ground, and he had no difficulty in finding out in what direction the tiger had gone. On and on he tracked the blood till he came to a cave at the foot of a high mountain. The sides of the cave were splashed with blood, so *Danjai* walked boldly in, determined to revenge the death of his wife. It was not very dark in the cave. In the distance he could see an opening and he hurried towards it.

He came out on the other side of the mountain, and saw a large plantation of sugar-cane and plantain trees. Beyond this he saw a long Dyak house.

"This," he said to himself, "is surely the abode of the Were-Tiger, and soon I shall have an opportunity of revenging the death of my wife."

He planted two sticks across one another in the ground to mark the opening in the mountain, so that he might not miss his way on his return, and then he boldly walked towards the house.

He followed a path through the sugar-cane plantation—still tracking the drops of blood upon the ground—until he came to the ladder leading up to the house. He was so anxious to attack his wife's murderer, that he did not pause to ask—as is the usual Dyak custom—whether he might walk up or not, but went straight on into the house. Men sitting in the verandah asked him, as he passed them, where he was going and what he wanted, but he did not answer them. His heart was heavy within him, thinking of his dead wife, and wondering whether he would be able to accomplish his task, and whether he would succeed in leaving the house as easily as he came in. But he was determined to avenge his wife's murder, and he would not shrink from any difficulties in the way.

He stopped at the room of the head of the house, and a girl asked him to sit down, and spread a mat for him. He did so, and the girl went into the room to fetch the brass vessel containing the betelnut ingredients which the Dyaks love to chew. As he sat down, he saw drops of blood on the fire-place, and looking up he noticed a fresh head, still dripping with blood, among the other skulls hanging there. He recognised it at a glance—it was the head of his loved wife!!

The girl came out with the brass vessel of betelnut and said: "Help yourself *Danjai.* We did not expect you to visit us so soon. Please excuse me for a little while, I have to attend to the cooking. But you will not be alone for my brother will soon be back. He has only gone to the plantation to fetch some sugar-cane."

So Danjai sat on the mat by himself, thinking what he was to do next and what he was to say to his wife's murderer when he came in. Soon the Were-Tiger arrived, carrying on his shoulder a bundle of sugar-cane.

"I am very pleased to see you *Danjai,*" he said, "would you like some sugar-cane? If so, help yourself."

Danjai was so sad thinking of his wife, that he did not notice how curious it was, that they should know his name when they had never seen him before. He did not feel at all inclined to eat sugar-cane, but lest his host should think he had come to kill, and to put him off his guard, he pretended to eat a little. He heard the Were-Tiger say to his sister in the room, that she was to be sure to have enough food cooked, as *Danjai* would eat with them that evening. Then he left them and went to the river to bathe.

The sister came out of the room, and spoke to *Danjai,* who was still sitting in the verandah, and asked him to come into the room as she had something to say to him.

"Yes, *Danjai,*" she said to him in a kind tone of voice, "I know of your trouble and I am sorry for you. However, if you follow my advice, all will be well. You must be careful, for my brother is easily put out, and has no scruples about killing any who displease him. Even our own people here hate him, for he is so merciless; but no one dare attack him, for all fear him greatly. Now listen attentively to what I have to say. When I put out the plates of rice in the room presently, do not take the one he tells you to have: take any of the others, for the one he wishes you to have is sure to contain some poison. Later on, when you retire to rest, do not spend the night on the mat spread out for you, but sleep somewhere else, and put the wooden mortar for pounding paddy on the mat in your stead: and so again on the second night, place the wooden mill for husking the paddy on your mat: and on the third night a roll of the coarse matting used for treading paddy. If his three attempts to kill you are unsuccessful, then he will be in your power and will do what you command. But even then there is still danger, and you must not do anything rash, but ask my advice again later on. But go outside now into the verandah, for I think I hear my brother returning from his bath. I must make haste and put out the food for you all to eat."

Soon the Were-Tiger came in and sitting on the mat by *Danjai* asked him the news and how matters were in his country. *Danjai* answered little for he was very sad, besides his host always laughed at him whenever he spoke. The fact was that he was amused at the idea of the man, whose wife he had killed, sitting in his verandah and talking to him in a friendly way.

The sister came out of the room and asked them in to have their meal. All happened as she said it would. *Danjai* remembered her advice and did not take the plate of rice his host offered him. But he was too sad to eat.

In the evening *Danjai* and the Were-Tiger sat by a fire in the verandah. Over this fire hung several human heads. The tears came into *Danjai's* eyes as he sat there and saw the head of his dear wife being scorched by the fire. He felt inclined there and then to grasp his sword and attack the murderer of his wife; but he restrained himself remembering the advice of the Tiger's sister.

The Were-Tiger said to him with a nasty laugh, "What is troubling you that you should weep?"

"I am not troubled about anything," said *Danjai*, "but the smoke of the fire is too much for my eyes, and it makes them water and feel sore."

"If so, " said his host, "let us put out the fire and retire to rest, as it is very late."

Two mats were spread out for them, one on each side of the fire-place, and they lay down to sleep. But *Danjai* kept awake, and when his companion was asleep, he rose and placed the wooden mortar for pounding paddy on his mat, and covered it over with a sheet; and he himself retired to a safe place as he was advised to do by the Tiger's sister. He watched to see what would happen and he was not disappointed. Not long after, he saw the Were-Tiger wake up and fetch a sword, and walk up to the place where he was supposed to be asleep. With the sword he made two or three vicious cuts at the wooden mortar and said:

"Now *Danjai*, this will settle you. You will not think of revenging yourself on me any more."

Then *Danjai* cried out from where he was, "What is the matter? What are you doing?"

"Oh *Danjai!* Is that you?" said his host, "I did not mean to hurt you. I had a bad dream, and I sometimes walk in my sleep. How lucky it is you were not lying on the mat! I should have certainly killed you, and I should never have forgiven myself for doing so. Please understand I meant no harm to you, and let us lie down to rest again."

On the two following nights the Were-Tiger attempted to kill *Danjai*, but failed each time, because following the advice given him, *Danjai* placed first the wooden mill for husking the paddy on his mat, and next a roll of coarse matting used for treading paddy. His host made the same excuse for his strange behaviour each time.

On the morning of the fourth day, after the Were-Tiger had left the house to see whether any fish had been caught in his fish trap, his sister asked *Danjai* to come into the room as she had something to say to him before he left to return home.

"Now *Danjai*," she said, "as I told you before, since my brother has not been able to kill you these three days, he is in your power. After breakfast ask him to accompany you and show you the way back to your country. When you have both come to the further end of the sugar-cane plantation, ask him to sit down for a little while, and say you would like to eat some sugar-cane, before you leave him and go on your journey alone. When he gives you the sugar-cane, ask him to lend you his sword, giving as an excuse that yours is not sharp enough for peeling the sugar-cane, or that it is stuck fast in its sheath and cannot be drawn. When he hands you his sword, you must attack him with it and kill him. My brother is invulnerable to any other sword but his own. When you have killed him, cut off his head and bring it to me, and I will give you your wife's head in exchange for it. On no account are you to take his head away with you. If you do so, I will follow you to your country and take my revenge."

A few minutes after this conversation, the Were-Tiger returned with a basket full of fish. Some of these were soon cooked, and they sat down to breakfast.

Soon after they had eaten, *Danjai* told his host that he must be returning to his own country, and asked him to accompany him and show him his way back. So they started together and walked through the sugar-cane plantation.

Just as they came near the end of it, *Danjai* asked his companion to stop. He said he would like to have some sugar-cane before going on.

" I am sorry I did not offer you any," said the Were-Tiger: "it was very forgetful of me. Never mind, I will at once cut down some sugar-cane for us."

When he had brought the sugar-cane and had finished peeling the piece he wanted for himself, *Danjai* said to him,

" Please lend me your sword, for mine is stuck fast in its sheath and I cannot draw it out."

The Were-Tiger suspecting nothing, handed the sword to him, and *Danjai* began peeling his sugar-cane.

Just then the Were-Tiger turned round to look at his house, and *Danjai* seizing his opportunity, gave him a blow with the sword in his hand and killed him. Then he cut off the head and carried it back with him to the house he had just left.

When he came near, he saw the sister watching for his return, and standing at the top of the ladder leading up to the house. He followed her into the house, and gave her the head of her brother.

" You ought to be quite satisfied now, *Danjai*," she said, " for you have killed my brother, and have taken your revenge for the death of your wife. I want you to promise me certain things before you go. First of all, you must not let anybody know that you have killed my brother. Next, on your return, you must go on the war-path and bring back to me the head of a woman, to enable me to put away the mourning of myself and my relatives, for the death of my brother. And when you return, I hope you will take me with you to be your comforter in the place of your dead wife: so that I may have some one to care for me, now that my brother is dead. And I give you now some locks of my hair, to be used as a charm to make you invisible to the enemy, when you are on the warpath. Lastly, I advise you and your people, never to eat or to take away any fruit you may find lying about in the jungle, on the stump of a tree, or on a rock, without knowing for certain who put it there and to whom it belongs, or making sure that it has fallen from some tree near. This must be remembered from generation to generation. Whoever disobeys this advice will be punished either by death, as in the case of your wife, or in some other dreadful way. You may now have the head of your wife to take back to your country; and as you may have forgotten the way, I will send one of my slaves with you, to show you in what direction you are to go."

As she finished speaking, she handed him his wife's head, and *Danjai* started off at once for he was anxious to get back.

He reached his house late that same evening. All his friends were glad to see him come back safe and sound. They had given up all hope of seeing him again. They were also pleased to see he had been successful in bringing back the head of his dead wife.

Soon after *Danjai's* return from the Were-Tiger's country he gathered all his followers together and told them that he intended going on the war-path. As soon as they were able to get everything ready, they started for the enemy's country. They were very successful and succeeded in taking many heads; but *Danjai*, protected as he was by the charm which he had received from the Were-Tiger's sister. was more successful than the others. They returned with much rejoicing, and a great feast was held in honor of their victory. The human heads were placed on a costly dish, and the women carried them into the house, with dancing and singing.

A few days after, *Danjai* started to fulfil his promise to the Were-Tiger's sister. He brought her back with him as his wife, and they lived very happily together for many years.

This story explains why the Dyaks, even at the present day, dare not eat any fruit they may find lying on the stump of a tree, or on a rock in the jungle. They fear that evil will happen to them, as it did to *Danjai's* wife.

II.

The Story of Siu,

Who first taught the Dyaks to plant Paddy and to observe the Omens of Birds.

Many thousands of years ago before the Paddy plant was known, the Dyaks lived on tapioca, yams, potatoes and such fruit as they could procure. It was not till *Siu* taught them how to plant Paddy that such a thing as rice was known. The story of how he came to learn of the existence of this important article of food, and how he and his son *Seragunting* introduced it among their people is here set forth.

Siu was the son of a great Dyak chief, but his father died when he was quite a child, and at the time this story begins, he lived with his mother and was the head of a long Dyak house in which lived some three hundred families. He was strong and active and handsome in appearance, and there was no one in the country round who was equal to him in strength or comeliness. When he was ready to go on the warpath, he was the admiration of all the Dyak damsels. On such occasions he appeared in a many coloured waistcloth, twelve fathoms in length, which was wound round and round his body. On his head was a plaited rattan band in which were stuck some long feathers of the hornbill. His coat was woven of threads of bright colours. On each well-shaped arm was an armlet of ivory. To his belt was fastened his sword and the many charms and amulets that he possessed. With his spear in his right hand and his shield on his left arm, he presented a splendid type of a Dyak Warrior. But not of his bravery nor of his deeds of valour against the enemy does this tale relate. It only gives an account of an adventure of his which ended in his discovery of Paddy.

One day *Siu* proposed to the young men of his house that they should take their blowpipes with them and go into the jungle to shoot birds. So one morning they all started early. Each man had with him his bundle of food for the day, and each went a different way, as they wished to see, on returning in the evening, who would be the most successful of them all.

Siu went towards a mountain not far from his house. He wandered about the whole morning in the jungle, but strange to say, he did not see any bird nor did he meet with any animal. Everything was very quiet and still. Worn out with fatigue, he sat down to rest under a large tree, and feeling hungry, he ate some of the food he had brought with him. It was now long past midday, and he had not been able to kill a single bird! Surely none of the others could be so unfortunate as he!

He determined not to be beaten by the others, and after a short rest, he started again and wandered on in quest of birds. The sun had gone half-way down in the western heaven, and he was beginning to lose heart, when suddenly he heard not far off the sound of birds. He hurried in that direction, and came to a large wild fig tree covered with ripe fruit, which a large number of birds were busy eating. Never before had he seen such a sight! On this one large tree, the whole feathered population of the forest seemed to have assembled together! On looking carefully, he was surprised to see that the different kinds of birds were not all intermingled together as is usually the case. Each species was apart from the others. Here he saw a large flock of wild pigeons on one branch, and next to them were the parrots, all feeding together but keeping distinct from them. Upon this tree there were hornbills, wood-peckers, wild pigeons and all the different kinds of birds he had ever seen.

He hid himself under the thick leaves of a shrub growing near, very much pleased at his luck. He took a poisoned dart and placed it in his blow-pipe, and taking good aim, shot it out. He had aimed at one bird in a particular flock, and he hit it. But that bird was not the only one that fell dead at his feet. To his astonishment, he saw that many of the other birds that were near it were killed also. Again he shot out a dart, and again the same thing happened. The bird that was hit fell down dead, and with it the birds that were near it. In a very short time, *Siu* had killed as many birds as he could carry. As the little basket, in which he had brought his food, was too small to hold them all, he set to work and made a large coarse basket with the bark of a *Pendok* tree growing near. Then he put his load on his back and started to return home, glad that he had been so successful.

He tried to follow the way by which he had come, but as he had not taken the precaution to cut marks in the trees he passed, he very soon found himself in difficulties. He wandered about, sometimes passing by some large tree, which he seemed to remember seeing in the morning. He climbed up a steep hill and went several miles through a large forest, but did not find the jungle path which he had followed early in the day. It was beginning to grow dusk and the sun had nearly set.

"I must hurry on," said *Siu* to himself, "in the hope of finding some house where I can get food and shelter. Once it is dark, I shall be forced to spend the night in the jungle."

He hurried on and luckily came to a part of the jungle which had lately been a garden.

"There must be some path from this garden," said *Siu* to himself, "leading to some house;" and he began to walk round it.

He soon found an old disused path which he followed and which led him to another path. By this time it was quite dark, and *Siu* made haste to reach the Dyak house which he felt sure was not very far off. He soon came to a well, and not far off he saw the lights and heard the usual sounds of a Dyak house. He was glad to think that he would not have to spend the night in the jungle, but would be probably able to get food and shelter at the house.

He stopped to have a bath and hid the birds he was carrying and his blow-pipe and quiver in the brushwood near the well, hoping to take them with him when he started to return the next morning.

As he approached the house, he could hear the voices of the people there. When he came to the bottom of the ladder leading up to the house, he shouted, "Oh! you people in the house, will you allow a stranger to walk up?" At once there was dead silence in the house. No one answered. Again *Siu* asked the same question, and, after a pause, a voice answered, "yes: come up!"

He walked up into the house. To his surprise, he saw no one in the open verandah in front of the different rooms. That part of a Dyak house, usually so crowded, was quite empty. Nor did *Siu* hear the voices of people talking in any of the rooms. All was silent. Even the person who answered him was not there to receive him.

He saw a dim light in the verandah, further on, in the middle of the house, and he walked towards it. He wondered what could have happened to all the people in the house, for not long before he heard many voices.

"This seems to be a strange house," he said to himself. "When I was bathing and when I walked up to the house, it seemed to be well inhabited, but now that I come in, I see no one, and hear no voice."

When *Siu* reached the light, he sat down on a mat there. Presently he heard a woman's voice in the room say, " Sit down *Siu* : I will bring out the *pinang* and *sireh* to you."

Siu was very pleased to hear a human voice. Soon a young and remarkably beautiful girl came out of the room with the chewing ingredients, which she placed before him.

"Here you are at last, *Siu*," she said. "I expected you would come earlier. How is it you are so late?"

"I stopped a little while at the well to have a bath, as I was hot and tired."

"You must be very hungry as well," she said, "wait a moment while I prepare some food for you. After you have eaten we can have our talk together."

When *Siu* was left to himself, he wondered what it all meant. Here was a long Dyak house, built for more than a hundred families to live in, and yet it seemed quite deserted. The only person in it appeared to be the beautiful girl who was cooking his food for him. Then again, he wondered how it was she knew his name and expected him that day. All these things filled him with wonder and surprise.

"Come in, *Siu*," said the voice from the room, "your food is ready."

Siu was very hungry and went in at once, and sat down to eat his dinner.

When they had done eating, she cleared away the plates and put things back into their places and tidied the room. Then she spread out a new mat for him, and brought out the *pinang* and *sireh*, and bade him be seated, as she wished to have a chat with him.

Siu had many questions to ask, and as soon as they were both seated, he began :—

"Why are you all alone in this house? This is a long house, and many families must live in it; where are the others? Why is everything so silent now? I am sure I heard voices before I entered the house; but now I hear no sound."

"Do not let us talk about this house or the people in it for the present. I would much rather talk of other matters. Tell me of your own people, and what news you bring from your country."

"There is no news to give you," *Siu* replied. "We have been rather badly off for food, as our potatoes and yams did not turn out so well this year as we hoped."

"Tell me, what made you come in this direction and how it was you found out this house."

"While I was hunting in the jungle to-day, I lost my way. After wandering about a long time, I found a path which I followed and came to this house. It was kind of you to take me in and give me food. If I had not found this house, I must have died in the jungle. To-morrow morning I must ask you to show me the way to my country, and also I must beg of you some food for my journey back. My mother is sure to be anxious about me. She is left all alone, now that I am away. My father died a long time ago, and I am her only son."

"Do not go away as soon as to-morrow morning. Stay here a few days at any rate."

At first *Siu* would not consent, but she spoke so nicely to him that she succeeded in persuading him to stay there at least a week. Then he went out to the verandah, and she brought out a mat for him to sleep on and a sheet to cover himself with. As *Siu* was very tired, he soon fell sound asleep, and did not wake up till late on the following morning.

He saw some little children playing about the next day, but he did not see any grown up people. He went into the room to have his morning meal, but saw no one there, except the girl he had seen the evening before. He felt very much inclined to ask her again where the people of the house were, but he did not do so, as she did not seem inclined to speak about them.

Now though *Siu* knew it not, this was the house of the great *Singalang Burong*, the Ruler of the Spirit World. He was able to metamorphose himself and his followers into any form. When going forth on an expedition against the enemy, he would transform himself and his followers into birds, so that they might travel more quickly. Over the high trees of the jungle, over the broad rivers, sometimes even across the sea *Singalang Burong* and his flock would fly. There was no trouble about food, for in the forests there were always some wild trees in fruit, and while assuming the form of birds, they lived on the food of birds. In his own house and among his own people *Singalang Burong* appeared as a man. He had eight daughters, and the girl who was cooking food for *Siu* was the youngest of them.

The reason why the people of the house were so quiet, and did not make their appearance, was because they were all in mourning for many of their relatives who had been killed some time back. Only the women and children were at home, because that same morning all the men had gone forth to make a raid upon some neighbouring tribe, so that they might bring home some human heads to enable them to end their mourning. For it was the custom that the people of a house continued to be in mourning for dead relatives, until one or more human heads were brought to the house. Then a feast was held, and all mourning was at an end.

After *Siu* had been in the house seven days, he thought he ought to think of returning to his own people. By this time he was very much in love with the girl who had been so kind to him, and he wished above all things to marry her, and take her back with him to his own country.

"I have been here a whole week," he said to her, "and though you have not told me your name, still I seem to know you very well. I have a request to make and I hope you will not be angry at what I say."

"Speak on; I promise I will not be angry whatever you may say."

"I have learnt to love you very much," said *Siu*, "and I would like to marry you if you will consent, so that I shall not leave you but take you with me, when I return to my own land. Also I wish you to tell me your name, and why this house is so silent, and where all the people belonging to it are."

"I will consent to marry you, for I also love you. But you must first promise me certain things. In the first place, you must not tell your people of this house and what you have seen here. Then also you must promise faithfully never to hurt a bird or even to hold one in your hands. If ever you break this promise, then we cease to be man and wife. And of course, you must never kill a bird, because if you do so, I shall not only leave you but revenge myself on you. Do you promise these things?"

"Yes" said *Siu*, "I promise not to speak of what I have seen here until you give me leave to do so. And as you do not wish it, I will never touch or handle a bird, and certainly never kill one."

"Now that you have promised what I wish, I will tell you about myself and the people of this house," said the maiden. "My name is *Endu-Sudan-Galinggam-Tinchin-Mas* (the girl Sudan painted like a gold ring), but my people call me by my pet names *Bunsu Burong* (the yougest of the bird family), and *Bunsu Katupong* (the youngest of the *Katupong* family). This house, as you noticed, seems very empty. The reason is that a month ago many of our people were killed by some of the people of your house, and we are all still in mourning for them. As you know, when our relatives have lately died, we stay silent in our rooms, and do not came out to receive visitors or to entertain them. Why are your people so cruel to us? They often kill our men when they go out fishing or hunting. On the morning of the day on which you arrived, all the men of this house went on the war-path, so as to obtain the heads of some of the enemy to enable us to put away our mourning. With us as with you it is necessary that one or more human heads be brought into the house, before the inmates can give up sorrowing for their dead relatives and friends. You see us now in the form of human beings, but all the people in this house are able to transform themselves into birds. My father *Singalang Burong* is the head of this house. I am the youngest of eight sisters: we have no brother alive.. Our only brother died not long ago, and we are still in mourning for him, and that was the reason why my sisters did not come out to greet you."

Siu heard with surprise all she had to say. He said to himself that it was lucky he did not bring up to the house the basket of birds which he had killed in the jungle, and that he had hidden them with his blow-pipe and quiver containing poisoned darts, in the brushwood near the well. He determined to say nothing about the matter, as probably some of her friends or relations were among the birds that were killed by him.

So *Siu* married *Bunsu Burong* and continued to live in the house for several weeks.

One day he said to his wife:—"I have been here a long time. My people must surely be wondering where I am, and whether I am still alive. My mother too must be very anxious about me. I should like to return to my people, and I want you to accompany me. My mother and my friends are sure to welcome you as my wife."

"Oh yes: I will gladly accompany you back to your home. But you must remember and say nothing of the things you have seen in this house. When shall we start?"

"We can start early to-morrow morning, soon after breakfast," answered *Siu*.

They started early the next day, taking with them food enough for four days, as they expected the journey would last as long as that. *Siu's* wife seemed to know the way, and after journeying for three days, they came to the stream near the house, and they stopped to have a bath. Some of the children of the house saw them there, and ran up to the house and said:—"*Siu* has come back, and with him is a beautiful woman, who seems to be his wife."

Some of the older people checked the children, saying:—"It cannot be *Siu*: he has been dead for a long time. Don't mention his name, for if his mother hears you talk of him, it will make her very unhappy."

But the children persisted in saying that it was indeed *Siu* that they had seen. Just then *Siu* and his wife appeared, and walked up to the house.

Siu said to his wife:—"The door before which I hang up my sword is the door of my room. Walk straight in. You will find my mother there, and she will be sure to be glad to welcome you as her daughter-in-law."

When they came into the house, all the inmates rushed out to meet them, and to congratulate *Siu* on his safe return.

They asked him many questions:—where had he been living all this time; how he came to be married, and what was the name of his wife's country. But *Siu* answered little, as he remembered the promise he had made to his wife, that he would not speak of what he had seen in her house.

When they reached the door of his room, *Siu* hung up his sword and his wife went into the room. But she did not see his mother as she was ill and was lying in her curtain. Then *Siu* followed his wife into the room and called out "Mother, where are you? Her is your son *Siu* come back!"

But his mother made no answer, so he opened her curtain, and saw her lying down, covered up with a blanket. She had been so troubled at the thought that her son was dead, that she had refused to eat and had become quite ill.

She would not believe that her son had really returned alive, and she said, "Do not try to deceive me; my son *Siu* is dead."

"I am indeed your son *Siu*, and I have come back alive and well!"

"No!" she replied, "my son *Siu* is dead. Leave me alone, I have not long to live. Let me die in peace and follow my son to the grave."

Siu then went to the box in which his clothes were kept, and put on the things that his mother had often seen him wear. Then he went to her again and said, "Even if you do not believe that I am your son, at any rate you might turn round and look at me, to make sure that I am not your son."

Then she looked at him, and saw that it was indeed her son. She was so pleased at his return that she soon recovered from her illness, which was really caused by her sorrow and refusal to eat. *Siu* told his mother of his marriage, and she welcomed his wife with joy.

The women all crowded round *Siu's* wife and asked her what her name was. She answered *Endu-Sudan-Galingam-Tinchin-Mas*. (The girl Sudan painted like a gold ring). They looked at her in surprise; they had never heard of such a name before.

"Where do you come from?" they asked. "What is the name of your country?"

"*Nanga Niga Bekurong Bebali nyadi Tekuyong Mabong*," (The mouth of the hidden Niga stream changed into the Mabong snail),* was the reply.

They were astonished at her answer! They had never heard of such a country. They asked her of her people, but she would not say anything more of herself or speak about her people.

Everybody admired the great beauty of *Siu's* wife. No more questions were asked of her, as she seemed unwilling to answer. Her parentage remained a mystery.

In process of time *Siu's* wife bore him a son whom they named *Seragunting*. He was a fine child, and as befitted the grandson of *Singalang Burong*, he grew big and strong in a miraculously short time, and when he was three years old, he was taller and stronger than others four times his age.

One day as *Seragunting* was playing with the other boys, a man brought up some birds which he had caught in a trap. As he walked through the house, he passed *Siu* who was sitting in the open verandah. *Siu* forgetting the promise he had made to his wife asked him to show him the birds, and he took one in his hands and stroked it. His wife was sitting not far off, and saw him hold the bird and was very much vexed that he had broken his promise to her.

She get up and returned to her room. *Siu* came in and noticed that she was troubled and asked her what was wrong. She said that she was only tired.

She said to herself:—"My husband has broken his word to me. He was done the thing he promised me he would never do. I told him he was never to hold a bird in his hands, and that if he did such a thing, I would leave him. I cannot stay here in this house any longer. I must return to the house of my father *Singalang Burong*."

She took the water vessels in her hands, and went out as if to fetch water. But when she came to the well, she placed the water vessels on the ground, and disappeared in the jungle.

In the meantime *Seragunting*, tired with his play came back in search of his mother. She was very fond indeed of him, and he expected her to come to him as soon as he called out to her. But he was disappointed. No one answered his call, and when he looked in the room, she was not there. He asked his father where his mother was, and he told him that she had just gone to the well to fetch water and would soon be back.

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*The Dyaks are fond of rhyming names, which often have no Special meaning.

But hour after hour passed, and she did not return to the house. So *Seragunting* began to be anxious, and asked his father to accompany him to the well to look for her. At first his father refused to do so, but when he saw his son crying for his mother, he went with him to the well. They found the water vessels there, but saw no signs of her.

"Your mother is not here, *Seragunting*," said *Siu*. "Perhaps she has gone to the garden to get some vegetables for our dinner. Let us go back to the house. If your mother is not back, early to-morrow morning, we will go and look for her." So they both returned to the house, taking back with them the water gourds which *Siu's* wife had left at the well.

Early the next morning, *Seragunting* and his father went in search of her. They took with them only a little food, as they expected to find her not very far off. But they wandered the whole day and saw no signs of her. They spent the night under a large tree in the jungle. Early the next morning, they were surprised to find a small bundle of food, wrapped up in leaves, near *Seragunting*. This food was evidently meant for him alone, as it was not enough for two, but he gave some of it to his father, who ate sparingly of it, so that his son might not be hungry. They wandered on for several days, and every night the same strange thing occurred—a bundle of food was left near *Seragunting*. *Siu* suggested to his son that they should return; but *Seragunting*, who during the journey had grown up into a strong lad with a will of his own, would not consent to do so, as he was determined to find his mother.

They wandered on for several days, deeper and deeper into the jungle; but could find no signs of her whom they sought. At last they came to the sea-shore. Here they rested for some days, in the hope that some boat might pass. Still, as before, each morning a bundle of food was found by *Seragunting*. If it were not for this food, they would have long ago died of starvation. On this food they managed to live, waiting hopefully to see some boat appear to take them on their journey.

One day as *Seragunting* was watching, he heard the sound of paddles, and saw in the distance several long boats approaching. He hailed the first, and asked the men in it to take him and his father with them. The boat made for the shore, but the man in the bows recognised the two wanderers, and shouted out:—"It is *Siu* and his son *Seragunting*: do not let them come into the boat." The boat went on and left them to their fate. The same thing happened in the case of each of the other boats. As soon as *Siu* and his son were recognised, no one would help them.

Now these were the boats of the sons-in-law of *Singalang Burong:—Katupong, Beragai, Bejampong, Papau, Nendak, Pangkas*, and *Embuas*. They were not pleased at their sister-in-law marrying a mere mortal like *Siu*, and so refused to help him and his son.

The next day *Seragunting* saw what seemed to be a dark cloud come towards him over the sea. As it came nearer, it took the form of a gigantic spider, carrying some food and clothes.

"Do not be afraid," said the Spider, "I have come to help you and your father. I have brought you food and clothing. When you have had some food and changed your clothes, I will take you across the water to the land on the other side. My name is *Emplawa Jawa* (the Spider of Java). I know your history, and I will lead you to your mother whom you seek."

After they had eaten and put on the new clothes brought them, the spider told them to go with him across the sea. They were not to be afraid, but to follow his track, not turning to the right hand nor to the left. They obeyed his words. Strange to say, the water become as hard as a sandbank under their feet. For a long time they were out of sight of land, but towards evening they approached the opposite shore, and saw a landing place where there were a large number of boats. Not far off where several houses, and one longer and more imposing than any of the others. To this house the Spider directed *Seragunting*, telling him that he would find his mother there. The Spider then left them. As it was late, they did not go up to the house that evening, but spent the night in one of the boats at the landing place. Among the boats were those belonging to the Sons-in-law of *Singalang Burong* which had passed *Siu* and his son as they waited on the sea-shore for some boat to take them across the sea.

When *Seragunting* and his father woke up next morning, they saw that the road leading up to the house had sharpened pieces of bamboo planted close together in the path, to prevent their walking up it. As they were wondering what they were to do next, a fly came to *Seragunting* and said:—

"Do not be afraid to walk up. Tread on the spikes that I alight on; they will not hurt you. When you come to the house you will find swords with blades turned upwards fastened to the ladder. Tread on the blades that I alight on and walk boldly up into the house."

They did as the fly advised them, and were not hurt. The bamboo spikes crumbled under their feet, and sword blades they trod on were blunt and harmless.

The people of the house took no notice of them, and they sat down in the verandah of the house. Then the fly came to *Seragunting* and whispered to him:—"You must now follow me into the room. Your mother is there, lying in her curtain. I will point out to you which it is, and you must wake her up and tell her who you are. She will be very pleased to see you. Then when you come out into the verandah and see the sons-in-law of *Singalang Burong*, you must greet them as your uncles. They will disown you and pretend that you are no relation of theirs. But do not be afraid. You will be victorious in the end."

Seragunting followed the fly into the room and went to the curtain on which it alighted. He called out to his mother, and she awoke and saw with joy her son. She embraced him, and he said to her:—

"How is it you went away and left us? We missed you so much, and were so sorry to lose you, that my father and I have been travelling for many days and nights in search of you. Now our troubles are over for I have found you."

"My dear son," she said as she carressed him, "though I left you I did not forget you. It was I who placed the food by you every night. I left your father because he broke the promise he made to me. But you are my own son, and I have been wishing to see you, ever since I left your house. It was I who sent the Spider to help you and show you your way here. My love for you is as great as it ever was. We will go out now into the verandah, and I will introduce you to your uncles and aunts and to your grandfather. They may not welcome you, because they were opposed to my marriage to your father. But do not be afraid of them. We will be more than a match for them all."

Then she spoke to her husband *Siu*, whom she was glad to meet again. All three then went out into the verandah, which was now full of people. *Seragunting* called the sons-in-law ot *Singalang Burong* his uncles, but they refused to acknowledge that he was their nephew.

They proposed several ordeals to prove the truth of his words, that he was indeed the grandson of *Singalang Burong*. In all of these *Seragunting* came off victorious.

As the men and boys were spinning their tops, they asked *Seragunting* to join them. He had no top of his own, so he asked his mother for one. She took an egg and uttered some mysterious words over it, and immediately it became a top. This she gave to her son, who went and joined the others in the game. Whenever *Seragunting* aimed at a top, he always hit it and smashed it in pieces. None of the others were a match for him. In a short time, all the tops except that of *Seragunting* were broken in pieces.

Then they suggested a wrestling match. *Seragunting* was quite ready to try a fall with any of them, old or young. Some of their best wrestlers came forward. The first two were overthrown so easily by him, that the others saw it was no use their attempting to wrestle with *Seragunting*.

As a last trial they proposed that all should go out hunting. Here they hoped to be more fortunate. All the sons-in-law of *Singalang Burong* took their good hunting dogs with them, confident of success. *Seragunting* was told that he could have any of the other dogs left in the house. There he saw a few old dogs, weak and useless for hunting. With these he was expected to compete against the others, and if he was not successful, both he and his father were to be killed! *Seragunting* consented even to such an unfair ordeal as that. He called to him an old sickly looking dog, and gently stroked it. At once it became young and strong! While the others went forth into the jungle with a pack of hounds, *Seragunting* was only accompanied by one dog. In the evening *Katupong*, *Beragai*, *Bejampong* and the others all returned unsuccessful. Soon after, *Seragunting's* dog appeared chasing a huge boar which made a stand at the foot of the ladder of the house. *Seragunting* asked the others to kill the beast if they dared. The spears cast at it glided off, and lelt the beast unharmed. Some of those who were rash enough to go near the animal, had a close escape from being torn in pieces by its tusks.

Seragunting armed with nothing better than a little knife belonging to his mother, walked up to the infuriated animal, and stabbed it in a vital part, and it fell down dead at his feet.

After these marvellous feats, all were compelled to admit that *Seragunting* was a true grandson of the great *Singalang Burong*. They all acknowledged him as such, and he was taken to his grand-father, who was pleased to see the lad and promised to help him throughout his life.

But *Siu* was unhappy in his new home. He could not help thinking of his mother whom he had left alone, and he was anxious to return to his own people. He begged his wife to accompany him back to his old home, but she refused to do so. It was decided that *Siu* and his son should stay in the house of *Singalang Burong* till they had obtained such knowledge as would be useful to them in the future, and that then they were to return to the lower world, bringing with them the secrets they had learnt from those wiser and more powerful than themselves.

All the people of the house were now most kind to *Siu* and his son, and were most anxious to teach them all they could. They were taken on a war expedition against the enemy, so they might learn the science and art of Dyak warfare. They were taught how to set traps to catch deer and wild pig. They were shown the different methods of catching fish, and learnt to make the different kinds of fish-trap used by the Dyaks of the present day. They remained in *Singalang Burong's* house that whole year, so that they might have a complete and practical knowledge of the different stages of paddy growing.

When the year was ended, *Seragunting's* mother took him and *Siu* to see her father, *Singalang Burong*, so that they might receive from him his advice, as well as such charms as he might wish to give them before they left to return to the lower world of mortals.

Singalang Burong was sitting in his chair of state, and received them most kindly when they came to him. He bade them be seated on the mat at his feet, as he had many things to say to them. Then he explained to *Siu* and his son who he was, and the worship due to him, and they learnt also about the observance of omens, both good and bad.

"I am the Ruler of the Spirit World," said *Singalang Burong*, "and have the power to make men successful in all they undertake. At all times, if you wish for my help, you must call upon me and make offerings to me. Especially must this be done before you go to fight against the enemy, for I am the God of War and help those who pay me due respect."

"You have learnt here how to plant paddy. I will give you some paddy to take away with you, and when you get back to your own country, you can teach men how to cultivate it. You will find rice a much more strengthening article of food than the yams and potatoes you used to live upon, and you will became a strong and hardy race.

"And to help you in your daily work, my sons-in-law will aways tell you whether that you do is right or wrong. In every work that you undertake, you must pay heed to the voices of the sacred birds:—*Katupong*, *Beragai*, *Bejampong*, *Papau*, *Nendak*, *Pangkas*, *and Embuas*. These birds, named after my sons-in-law, represent them and are the means by which I make known my wishes to mankind. When you hear them, remember it is myself speaking through my sons-in-law for encouragement or for warning. Whatever work you may be engaged in—farm work, house-building, fishing or hunting—wherever you may be you must always do as these birds direct. Whenever you have a feast, you must make an offering to me, and you must call upon my sons-in-law to come and partake of the feast. If you do not do these things, some evil is sure to happen to you. I am willing to help you and to give you prosperity, but I expect due respect to be paid to me, and will not allow my commands to be disobeyed."

Then *Singalang Burong* presented them with many charms to take away with them. These were of various kinds. Some had the power to make the owner brave and fortunate in war. Others were to preserve him in good health, or to make him successful in his paddy planting and cause him to have good harvests.

Siu and *Seragunting* then bade their friends farewell, and started to return. As soon as they had descended the ladder of the house of *Singalang Burong*, they were swiftly transported through the air by some mysterious power, and in a moment they found themselves at the bathing place of their own house.

Their friends crowded round them, glad to see them back, safe and well. They were taken with much rejoicing to the house. Friends and neighbours were told of their return, and a great meeting was held that evening. All gathered round the two adventurers, who told them of their strange experiences in the far country of the Spirit Birds. The charms received from *Singalang Burong* were handed round for general admiration. The new seed paddy was produced, and the good qualities of Rice as an article of food explained. The people congregated there had never seen paddy before, but all determined to be guided by *Siu* and *Seragunting*, and to plant it in future. The different names of the Sacred Birds were told to the assembled people, and all were warned to pay due respect to their cries.

And so, according to the ancient legend, ended the old primitive life of the Dyak, when he lived upon such poor food as the fruits of the jungle, and any yams and potatoes he happened to plant near his house; the old blind existence, in which there was nothing to guide him; and then began his new life, in which he advanced forward a step, and learnt to have regularly, year by year, his seed-time and harvest, and to know that there were unseen powers ruling the Universe, whose will might be learnt by mankind, and obedience to whom would bring success and happiness.

Note.

On receiving the above legends from Mr. Gomes I pointed out to him the curious fact that in the first legend the tiger—a beast quite unknown in Borneo—plays a prominent part, and suggested that this story may have been of Malay origin. He replies by referring to A. H. Everett's paper on the Tiger in Borneo, in Journal 5, p. 157, and says "the 'Tree-tiger' *Felis marmorata* is common enough. The Dyaks call it by a distinctive name 'Kemaung dau' or 'Kemaung raras' (dau and raras both being words meaning the branch of a tree). These would lead one to suppose that at one time they knew of some other species they called simply 'Kemaung.'" Everett refers to traditions of the animal also, among the Sea Dyaks. One may compare these traditions of an animal apparently absent from the country with those of the Mias (Mawas) of the Malay peninsula.

H. N. Ridley.

New Malayan Plants.

By H. N. RIDLEY.

The following plants apparently undescribed have turned up lately in various collections made in the Peninsula.

SCITAMINEÆ.

Zingiber Wrayii, Prain mss. A slender plant over a foot tall. Leaves elliptic, lanceolate, glabrous, 9 inches long, 3 inches wide, narrowed at the base but not petioled. Peduncle 4 inches tall covered with large loose sheathing leaves, spike three inches long, ovoid obconic. Bracts thin elliptic 1½ inch long ½ inch wide or less. Flowers solitary yellow. Bracteole spathaceous, lip spotted and marked with purple. Anther narrow linear, beak half an inch long.

Upper Perak at 300 feet elevation (Wray 3735). The only specimen I have seen is in poor condition but it seems a distinct plant from any described, from its rounded head of thin bracts, most of the allied species having cylindric spikes.

Elettariopsis cyanescens, n. sp. Rhizome ¼ inch through, violet inside, covered with dry sheaths, stems 18 inches tall, rather slender base, olivaceous. Leaves 8, lanceolate acuminate glabrous 6 inches long 1½ inches wide, hardly petiolate, ligule rounded short. Spike short, peduncle half an inch long covered with long dry lanceolate bracts 1½ inches long, flowers four. Ovary oblong pubescent ¼ inch long. Calyx tube 1½ inches long, pubescent at the base, apex long acuminate. Corolla tube narrow ½ inch longer pubescent, lobes oblong half an inch long ⅙ inch wide lip, oblong rounded 1 inch long. All white except the tip of the lip which is blue. Stamen oblong, crest moderately large, stigma large cup-shaped with pubescent edges.

This pretty species was collected by Mr. W. G. Napier on banks at Bukit Tanga, Seremban; it is nearly allied to *E. pubescens* but has much shorter flower spikes and quite glabrous leaves. The flowers when bruised became of a blue color, perhaps containing indigo.

ORCHIDEÆ.

Dendrobium mellitum, n. sp. A very small epiphytic plant, stems few 4 or 5 inches long, very slender above the lowest two or three joints, swollen a little for $\frac{3}{4}$ inch length. Leaves few terete subulate, 3 inches long $\frac{1}{16}$ inch thick. Flower solitary subterminal, from a short raceme, with small bracts. Pedicel and ovary $\frac{1}{8}$ inch long thick yellow. Upper sepal ovate $\frac{1}{4}$ inch long, lateral sepals ovate falcate obtuse, mentum short broad and blunt. Petals narrower and shorter, all yellow. Lip three-lobed, lobes broad short curved tips rounded yellow veined with pink inside, midlobe oblong truncate, edged minutely laciniate veins and a patch in the centre pink, three parallel raised veins white on the disc. Anther oblong hemispheric brown, column face flat stained pink.

Johore, at Castlewood on the Sungei Tebrau, May 1903, I found a single plant of this very weak slender little orchid on a tree, and flowered it in the Botanic Gardens. It is allied to *D. clavator*, Ridley, a native of Perak, but has the base of the stem much less swollen, and an entirely different lip. Considering the size of the flower, half an inch across, it was wonderfully strongly scented of honey.

Thrixspermum crassifolium, n. sp. An epiphyte on coffee bushes, stem 6 inches tall, thick, leaves close set, thick leathery oblong obtuse, tip rounded, 4 inches long $1\frac{1}{2}$ inches thick, sheaths under half an inch long purple, scapes 3 to 5 inches long stiff, base purple, raceme $1\frac{1}{2}$ to 4 inches long flattened. Bracts distichous $\frac{1}{4}$ inch long close set, ovary and pedicel $\frac{1}{4}$ inch long. Sepals linear caudate from a broader base $\frac{3}{4}$ inch long, petals narrower linear caudate, all bright pellow. Lip $\frac{1}{4}$ inch long, pubescent orange passing into cherry red at the tip. Spur saccate blunt, side lobes arched blunt, middle fleshy blunt ovate. Callus on the disc tongue-shaped rounded depressed in the centre, column white with rounded and broad wings. Anther hemispheric. Fruit linear angled, 3 inches long $\frac{1}{4}$ inch through.

On old coffee bushes at Castlewood, Johore. This is allied to *Th. Arachnites* which was common in the same place, but has the short stout leaves and stem of *Th. Scortechinii.* The flowers however are much smaller than any other of this group.

AMARYLLIDEÆ.

Curculigo megacarpa, n. sp. A large tufted plant with a stout stem. Leaves dark green oblong lanceolate acuminate glabrous 20 inches long, 3 inches wide, petiole 8 inches long. Peduncle 4 inches long tomentose with large lanceolate acuminate bracts at the base, lower ones hairy on the edge only, upper ones more hairy. Spike broad conic-cylindric 2 to 4 inches long. Flower 1 inch across. Sepals lanceolate acute $\frac{1}{2}$ inch long dirty yellow outside and hairy at the tip. Petals bright yellow, stamens yellow, filaments short, anthers oblong, wavy, hairy, beaked. Fruit 2 inches long, Indian-club shaped $\frac{3}{8}$ inch through at the base, white seeds very numerous angled ribbed black.

Perak, in forests on the Thaiping Hills at 2000 to 3000 feet elevation.

This seems to be common on the Thaiping Hills and has probably been hitherto overlooked or taken for a form of *C. latifolia*, but it can hardly be referred to that species, variable as it is. It is larger in all parts of the flower and fruit, the latter being very long club shaped.

BURMANNIACEÆ.

Burmannia oblonga, n. sp. A slender saprophyte 5 inches tall with numerous wiry roots. Stem sparingly or not at all branched. Leaves sheath-like, scales few and distant. Flowers one or two on the ends of the stem $\frac{3}{8}$ inch long and $\frac{1}{4}$ inch broad across the wings, tube narrow wings oblong with straight edges, angles rounded. Sepals and petals short blunt. Petals much the shorter.

Penang on rocks at 1500 to 2000 feet altitude (King's collector 2270.)

This plant should be sought again. It resembles the common *B. coelestis* in the form of its flowers, but is saprophytic. The very broad oblong wings of the perianth tube are very striking.

Since publishing the paper on *Burmanniaceæ* in Journal 22, p. 332, I have been able to add to this group of plants:—*B. Championii*, Thwaites. A small ivory white plant like *B. tuberosa*, Becc., but more compact, with a short thick root stock covered with scales, from the Laba river in Selangor, and two additional species of *Thismia; Th. grandiflora*, Ridl., with rather large pink flowers collected by Lieut. Kelsall on the Sembrong river in Johor; and *Th. chrysops*, Ridl., a very pretty kind from Mount Ophir with pink and chocolate flowers with a yellow ring round the mouth of the tube; and *Bagnisia crocea* of Beccari, a very oddly shaped little brown species met with in the Perak Hills.

DIOSCOREACEÆ.

Dioscorea tennifolia, n. sp. Stems slender leaves mostly opposite thin glabrous elliptic cuspidate, base rounded 5 nerved 2 to 3 inches long an inch wide, petiole slender an inch long. Male panicle long and slender a foot or more, spikes slender one to three inches long, 3 or more in a whorl, rachis angled minutely pubescent. Flowers very small distant pubescent. Bracts shorter ovate. Sepals oblong ovate. Petals nearly as long oblong obtuse. Stamens 6, filaments fairly long.

Singapore on Bukit Timah (Ridley 4596.)

This wild yam is remarkable for its very thin leaves and slender stems. I have only met with a male plant but it seems very distinct from all other described species.

LILIACEÆ.

Ophiopogon Malayanus, n. sp. Stem erect stout 4 inches or more tall covered with the scarious sheaths of the fallen leaves and emitting long woody roots. Leaves linear acuminate, falcate striate, glaucous beneath 9 inches long $\frac{3}{8}$ inch wide. Scape 4 inches long base nude. Flowers small white. Bracts 2, bases broad ovate, tips linear, outer one $\frac{1}{4}$ inch long. Pedicel longer. Sepals and petals ovate subacute $\frac{1}{8}$ inch long. Stamens connivent filaments very short, anthers lanceolate. Style terete longer.

Perak at Padang Rengas (W. Fox) Lankawi on Gunong Raya (Curtis 2643). The Ophiopogons are abundant in the mountainous regions of North India and China, but get very scanty further south, in fact this is the only one from the Peninsula except the little known and doubtful *O. prolifera* from Penang. Though perhaps as near the common and variable *O. intermedius* of India, it is very distinct in its tall stout stem, broad leaves and ovate petals and sepals.

Tupistra violacea, n. sp. Terrestrial stem short and stout, leaves broadly oblong oblanceolate acute narrowed gradually to the base, 3 feet long, 3 inches wide, dark green stiff, spike very dense about 8 inches high. Flowers sessile $\frac{1}{2}$ inch across, tube hemispheric violet, lobes oblong recurved darker. Anthers 6 sessile elliptic. Style cylindric white, spotted with violet. Stigma club-shaped rounded obscurely three-lobed.

Perak, Bujong Malacca; Penang, Highlands (Curtis).

This Tupistra differs from the other Peninsular species, *T. grandis*, Ridl., in its smaller lighter colored flowers and the rounded club-shaped stigma which is flat and circular in *T. grandis*. Though not perhaps as striking as that species it is a pretty plant.

Dracaena conferta, n.sp. Stem 4 to 10 feet tall, little or not branched. Leaves narrow linear acuminate 24 to 27 inches long $\frac{3}{8}$ inch wide, base broadly sheathing, midrib very strong at the base, thinning upwards and disappearing before the tip. Raceme 2 feet long, erect, simple or occasionally branched, the base with numerous reduced leaves with broad bases, and acuminate upwards, peduncle rather stout with a few small sheathing leaves, inflorescence long dense. Flowers white, three or four in a tuft, with very short pedicels, and 2 or 3 ovate acuminate bracts $\frac{1}{8}$

inch long. Perianth tube $\frac{1}{4}$ inch long, narrow lobes linear $\frac{1}{4}$ inch long. Fruit globose as large as a pea.

Perak, Selama at 300 to 500 feet elevation (King's collection 3149); Thaiping Hills near the Tea Gardens. There is also a specimen in Cantley's collections without locality, either from Malacca or Sungei Ujong. This Dracaena is allied to *D. Porteri*, Bak., but has longer and stiffer leaves with a very dense raceme of flowers. It is known to Malays as "Poko San Juan hutan jantan."

Dr. penangensis, n.sp. A shrub about 8 or 10 feet tall, with the stem an inch through, leaves when young oblong petioled, adults shorter. Upper leaves lanceolate acuminate 6 to 7 inches long, 1 to $1\frac{1}{4}$ inch wide, petiole 1 inch long, sheathing at the base. Panicle erect 8 to 10 inches long with about eleven or twelve stiff branches four inches long or less with lanceolate acuminate bracts at the base $\frac{1}{4}$ to $\frac{1}{2}$ inch long. Flowers in twos and threes on slender pedicels $\frac{1}{4}$ inch long. Perianth lobes narrow, white. Fruit as large as a cherry, 1 to 3 seeded, scarlet.

Penang at Batu Feringhi on the banks of the stream and at Highlands (Curtis 2369). Dried specimens of this often resemble those of *D. Maingayi* our biggest tree Dracaena, but the living plant is much smaller and the leaves are very variable in form.

D. Jackiana, Wall. Cat. 5145. This plant obtained in Penang by Wallich was confused by Baker (Journ. Linn. Soc. XIV, 5-32) with *D. aurantiaca*, Wallich, under the name of *D. spicata* var. *aurantiaca*; and Hooker in the flora of British India puts it under imperfectly known species. I have not seen Wallich's specimens but Dr. Prain says that a plant collected on the Thaiping Hills by Kunstler (No. 2719) is exactly like the Wallichian plant. This plant is I think identical with a plant I collected in Pahang and described under the name of *D. longifolia* (Trans. Linn. Soc. III, 388). Hooker refers the Perak plant to Kurz's *D. pachyphylla*, an Andamanese plant, which however is probably distinct to judge from his description.

D. pendula, n.sp. A tall shrub with a moderately stout stem about 6 feet tall, leaves broadly oblong lanceolate acuminate narrowed to the base and subpetiolate. Petiole winged, 8 to 14 inches long 1½ to 3½ inches wide. Panicle graceful nodding 15 inches or more long with a few distant branches slender 7 or 8 inches long bracts small ovate lanceolate. Flowers in tufts of 2 or 3 distant white on pedicels ⅛ inch long, slender ¾ to nearly an inch long split into segments for one-half their length; the lobes linear dilated upwards, stamens about as long, anthers oblong.

This fine plant grows in damp swampy spots in forests. I collected it in the Dindings on Gunong Tungal (No. 9448 of my collections) and have it also from Panchur in Malacca; and from Kwala Dipang and Gopeng from King's collections (Nos. 8279 and 4643). The Malacca specimens have broader and more distinctly petiolate leaves, and the panicle is stouter, but it appears to be specifically the same. It belongs to the *nutantes* section of Dracaena, in which the flowers are in long pendulous lax panicles.

Dracaena elliptica, Thunb. I found this common and variable plant growing abundantly in muddy swampy places along the Sungei Tebrau, this Easter. In this locality it had quite a different appearance from the common lowland dry forest form, being altogether a much larger and stouter plant, almost a small tree in fact.

We have now no less than sixteen species of Dracaena recorded from the Malay Peninsula, but there are doubtless more than this for I have seen several plants in our forests which appear quite distinct from any described, but of which I have not been able to obtain flowers.

COMMELINACEÆ.

Forrestia gracilis, n. sp. Stem creeping then ascending for about three feet a quarter of an inch through, twiggy dark green and glabrous, internodes 2 inches long terete. Leaves lanceolate acuminate narrowed into a winged petiole, dark green and glabrous above, velvety beneath, margined with red appressed hairs, 8 inches long 2 inches wide, petiole and mouths of sheaths hairy. Heads small few-flowered; bracts ovate pubescent white with a green keel. Sepals oblong hooded ciliate white $\frac{1}{6}$ inch long; petals longer lanceolate acute white; stamens 6; filaments contorted with a tuft of white hairs on the top. Anthers ovate deeply grooved white. Style filiform flexuous acuminate. Stigma minute, ovary small covered with white hair; capsule oblong pink.

F. mollis, Clarke, Monogr. Commel. p. 236 (in part, not of Hasskarl).

Very common in woods, Singapore. Tanglin, Pulau Ubin (Ridley 4130), (Walker 155); Johore: Tanjong Bunga (Ridley 6320); Pahang: Pulau Tijau (2381, 2382); Malacca: Sungei Buluh (10512); Selangor: Kuala Lumpor, Sungei Ujong: Gunong Berumbun, (Cantley's Coll.); Dindings: Telok Sera. Kedah Peak.

It is curious that this our commonest species has escaped being described till now, but it seems to have been mixed up with the rarer *F. mollis*. It is known as "Setawa betina" and the Sakais use a decoction of its roots for rheumatism.

F. irritans, n. sp. Stem tall and stout $\frac{1}{2}$ inch through, leaves elliptic lanceolate with a broad flat petiole, acuminate 9 inches long, 3 inches across, hairy on both sides, sheaths $1\frac{1}{2}$ inches long, glabrous except for the hispid edges. Heads large and dense over an inch through, densely covered with red spiny hairs, sepals lanceolate covered with similar hairs. Stamens 6, anthers oblong, style filiform.

Selangor, on the Tras route at the 15th mile; Perak Bujong Malacca (Ridley 9784), Sungei Ujong, Bukit Kupayiang (Cantley's collection.) Rather rare in woods at an altitude of about 2,000 feet. A very distinct species, from its large globose heads of flowers covered densely with sharp pungent red spines. I have never seen fruit of it.

PALMÆ.

Pinanga Singaporensis, n. sp. Stems tufted dark green 6 to 15 feet tall $\frac{3}{4}$ inch through; internodes 8 inches long.

Leaves concolorous or a little paler along the back about 3 feet long, sheath tubular, petiole 8 inches long, leaflets sigmoid acuminate about 13, sub-opposite, terminal one forked; 12 inches long by 3 inches wide or less, nerves 5 to 7. Spike branched erect 4 inches long, with 5 branches. Spathe thin boat-shaped papery with a short point brownish pink 1½ inch long. Rachis cream color scurfy, flowers distichous. Males ¼ inch long, ivory white. Sepals very small acute. Petals oblique ovate acuminate much larger. Stamens 14 white, filaments very short, anthers oblong, no pistillode. Female petals and sepals broadly oblong pink, edges ciliate, stigma small, sessile papillose circular white.

This pretty palm occurs in Singapore in forests at Bukit Timah, Mandai, Stagmount and Selitar, and is No. 11267 of my collections. I have not seen it outside Singapore, and it is rather scarce there.

Ptychoraphis longiflora, n. sp. Habit and stems of *Pt. Singaporensis*. Leaf three feet or more long, rachis brown scurfy, leaflets linear acuminate 5-ribbed, alternate about 40 pairs 18 inches long, ½ inch wide. Peduncle stout 1 inch long ribbed and scurfy, branches of inflorescence slender 4 or 5 scurfy, 6 or 7 inches long. Flowers in distinct pairs, one male and one female together about 20 pairs on a branch; males $\frac{3}{16}$ inch long, with two orbicular gibbous bracts at the base. Calyx lobes orbicular fringed. Petals lanceolate obtuse much longer. Stamens 6 shorter than the petals, filaments with a broad base narrowed upwards, anthers oblong dorsifixed. Pistillode conic stout as long as the stamens. Female flowers. Bract single small. Sepals orbicular ciliate. Petals ovate orbicular imbricate, pistil ovoid.

Johore on the top of Gunong Banang at Batu Pahat, (Ridley 1121). Besides this there are two other species of this genus described. *Pt. Singaporensis*, Becc., the Korintin palm, abundant in the South of the Peninsula, and *Pt. augusta* of the Nicobars, a plant of totally different habit. This new species closely resembles *Pt. Singaporensis*, but the petals of the male are very much longer.

Iguanura spectabilis, n. sp. Stem from 3 to 8 feet tall, tufted or solitary very stout over 1½ inch through. Leaves entire and cuneate bilobed at the apex, margins crenulate toothed strongly ribbed, three or more feet long one foot across, petiole. Inflorescence from among the leaves, peduncle over a foot long with two sheaths 6 inches long, and a bract-like ovate acute leaf ¼ inch long above, branches stout ascending, six inches long, deep green. Flowers spirally arranged sunk in the rachis. Male, sepals ovate. Petals oblong acute twice as long ⅛ inch long. Stamens 6, longer than the petals, filaments thick connate at the base with the long cylindric obtuse pistillode. Females, sepals rounded, petals ovate rounded. Fruit elliptic tip curved, black when ripe, ¾ inch long, on the thickened rachis.

This superb palm known to Malays as the "Teruno" occurse on the Hermitage Hill in Perak, and at Bruas in the Dindings where it was first obtained by Mr. Curtis and later by myself, (No. 8403) of my collections. Young living plants sent home by Mr. Curtis were described by Dr. Masters in the Gardener's Chronicle (1898, XXIII, 258) under the name of *Geonoma Pynærtiana*. In the Dindings it forms a bush with numerous short stems, on the Hermitage Hill I found it with a stout tall stem. It is a most beautiful palm when well grown, the broad leaves deep green when adult, and pink when first put out, making it most attractive.

I. ferruginea, n. sp. Stem slender, leaves 18 inches long, petiole four inches long, rachis red-scurfy, leaflets 5 or 6 pairs alternate trapezoid, base narrowed, apex acuminate, margins more or less toothed, 6 inches long 3 inches through. Spathes 6 inches long acuminate. Inflorescence on a peduncle 6 to 8 inches long, red tomentose, branches thick 9 to 11 some-times branched again, 6 inches long covered with red wool. Flowers scattered distichous in foveolæ, covered with red wool. Male flowers glabrous. Sepals ovate rounded, petals lanceolate ribbed, ⅓ longer. Female flowers sepals similar, petals shorter and blunter. Drupe cylindric curved, slightly narrowed towards the tip, black, half inch long. Seed cylindric acute curved rugose $\frac{3}{8}$ inch long ; albumen equable.

On the Thaiping Hills common from about 2000 feet elevation upwards (10684 ; 11405 of my collection) and Bujong Malacca (Curtis 3164). This palm has the habit of *I. polymorpha*, Becc., but the stouter inflorescence on a longer peduncle and covered with red wool, the larger flowers, and curved cylindric fruit, make it very distinct.

The Iguanuras are not an easy group of palms to separate, as they are apt to be very variable especially in the form of the inflorescence. There appear to be seven kinds at present known from the Peninsula. The commonest species is *I. geonomæformis*, Mart. A lowland species with usually one simple spike. Of this there are the following forms : (a) *typica*, with a simple stout tomentose spike, (b) *ramosa*, a similar spike but branched, with 2 or 3 branches, (c) *malaccensis*, with a slender glabrous simple spike (occasionally branched). The leaves of all these forms may be quite entire. *I. Wallichiana*, Hook fil, with a compound inflorescence of several slender branches, is allied to this latter form. It also varies in the form of the leaves. Two plants described by Hooker and Beccari from Scortechini's collection, viz., *I. diffusa* and *I. parvula*, appear to me to be forms of these species. The first is a large plant with an inflorescence more compound, the second a dwarf abnormal form. I have only however seen sketches of them and very little of the plants appears to have been collected. *I. corniculata* has also only once been collected. The fruit is curiously curved, and is possibly abnormal, *I. polymorpha*, Becc., including *I. brevipes*, Hook. fil., is a distinct plant, not rare on the Thaiping Hills. *I. ferruginea* is allied to it but seems to me to be distinct. *I. bicornis* has curiously bilobed fruit, and occurs also on the Thaiping Hills, but seems to be rare.

Livistona rupicola, n. sp. Stem short and thick about 3 feet long and 6 inches through, densely covered with brown fibers from the leaf sheaths. Leaves orbicular about 2 feet across with about 12 leaflets rather narrow very acuminate tips setaceous; petiole slender 20 inches long nearly thornless. Spadix slender, much branched. Spathes split striate cuspidate dark brown, the two basal ones three inches long, upper ones slightly dilate cuspidate. Branches many long slender with many very long and slender sinuous spikes 1 to 2 inches long, lengthening to 4 inches in fruit. Bracts at the base of the branches linear narrow caducous. Flowers very small globose; sepals rounded gibbous. Petals similar. Staminal crown with 6 subulate teeth.

Selangor limestone rocks at the Kuala Lumpor caves (8285 of my collection), Lankawi Islands, (Curtis).

This charming palm, the Serdang Batu of the Lankawi Islands, is probably the smallest species of the genus. It is remarkable for its very short thick stem densely covered with brown fibres, the remains of old leaf sheaths. The inflorescence is also very small for the genus. It grows on the limestone rocks of the Selangor caves from the lower part to the top of the cliffs.

Licuala longepedunculata, n. sp. Stem 2 to 8 feet tall, 1 to 1½ inch through, leaves 4 to 5 feet long orbicular, lobes 6 or more narrowed at the base and broadened upwards with broad blunt teeth 15 to 16 inches long and 3 inches across at the tip, deep green, petiole slender not thorny. Inflorescence slender 3 feet or more long, peduncle broad flattened at the base, quite glabrous over 2 feet long, sheaths distant long, spikes 3 inches long, in fours. Flowers scattered over ⅛ inch long, rachis moderately stout, calyx urn-shaped sessile not lobed. Petals lanceolate obtuse.

Perak, Gunong Batu Putih (Wray 254) (King's Coll. 8148). I only know this species from the above mentioned collections. Beccari labels it "*L glabra*, foliis latioribus," but it is certainly very distinct from *L. glabra.*

L. (Pericycla) paniculata, n. sp. Leaf large, lobes 2½ feet long, rather narrow, with short teeth ¼ inch broad. Inflorescence panicled wide-spreading 3 feet long, spathes 6 not split, the lowest 8 inches long ½ inch wide, upper part reddish, upper spathes shorter dilated upwards. Branches panicled, spikes long and slender 5 to 7, glabrous or scurfy, 7 inches long or less. Flowers scattered sessile $\frac{1}{8}$ inch long. Calyx cylindric with a broad base, truncate obscurely and irregularly lobed glabrous. Petals short and broad ovate acute. Staminal ring with 6 teeth. Pistil sometimes bilobed, stigma lateral.

I collected a specimen of this on the Hermitage Hill in Perak, and have never seen it since, and unfortunately omitted to record the size of the plant. It is evidently allied to *L. pericycla*, *Zipp.*, *Pericycla penduliflora* of Blume, a native of New Guinea, from which it differs in having solitary sessile, not stalked flowers in pairs. The panicled inflorescence is unique in Malay Licualas as at present known, and is the characteristic of the section *Pericyclus* of which the New Guinea species is the only other one known. It is to be hoped that any one visiting the Hermitage Hill will recollect this curious plant and bring full details of its habit and size.

Calamus aquatilis, n. sp. Stem fairly stout about 30 feet long covered with dense bristle-like black spines. Leaf large flagelliferous armed with copious black spines in short rows, petiole a foot long stout black rounded, edge armed with spines of different sizes flattened 2 inches long or less, those at the base black long or slender, leaflets numerous equidistant linear acuminate 1 foot long an inch broad, bristles short scattered along the edges and back, flagellum 4 feet long, hooks in half whorls numerous. Panicle very large and stout, lower sheaths tubular an inch through with numerous decurved spines single or in twos and threes black tipped, chiefly on the back and sides on the upper part. Branches about 2 feet long, secondary spathes tubular unarmed an inch long, male branchlets numerous 6 inches long, spathels tubular about $\frac{1}{8}$ inch long, spikes subdistichous recurved $\frac{3}{8}$ inch long green. Spathellules saucer-shaped with a small ovate limb, sepals oblong lanceolate. Petals as long oblong lanceolate thicker. Stamens, filaments rather long slender, anthers long narrow. Female branchlets 2 to 3 inches long, spathels funnel-shaped. Spathellules small saucer-shaped. Flowers solitary, sepals ovate as long as the petals and quite similar. Fruit small globular beaked ½ inch long scales in 6 whorls, rhomboidal as broad as long, yellow or brownish yellow, tips darker, grooved.

This rattan is common in tidal river swamps, and is known as "Rotan Bakau." There is a trade rattan of the same name but I am not yet certain that it belongs strictly to this plant. The general appearance of this species when out of flower is that of *Daemonorops angustifolius.* It does not seem to flower very frequently, as I have seldom found it in flower or fruit, abundant as it is, which is probably why it has never hitherto been described. Professor Beccari who is engaged on a work on our rattans to be published in the Annals of the Botanic Gardens of Calcutta, considers it to be quite a distinct plant from any described.

I have met with it in Singapore, on the Serangoon Road, and at Changi (6275 of my collections), Johore, Panchur on the Johore river; on the Sungei Tebrau river, and at Batu Pahat (11216), and in Pahang at Kuala Pahang.

AROIDEÆ.

Cryptocoryne purpurea. n. sp. Aquatic, stem creeping stoloniferous. Leaves ovate or elliptic ovate, base broad 3 inches long 1¾ inch wide, petioles 4 inches long, peduncle short about half an inch long, spathe 3 or more inches long, tube twisted ¼ inch through, white, limb ovate caudate ½ to 1 inch long, half an inch wide deep purple brown with a yellow mouth, pustular, tail ½ inch long, valve over the inflorescence oblong truncate pale yellow. Female flowers 6 to 8 connate in a circle, styles very short, stigmas discoid, neuters above the pistils 5 or more, nude portion of spadix slender. Male flowers few yellow obcuneate, appendix small elliptic clubbed.

Johore, Kota Tinggi (4214 of my collections). This plant cultivated in the Singapore Botanic Gardens for several years, was sent to Kew Gardens where it flowered and was figured in the Botanical Magazine plate 7719 under the name of *C. Griffithii.* It is however quite distinct from that in its more numerous, female flowers, smaller appendix to the spadix, and much longer tube. It grows very readily in water, and is perhaps the easiest to cultivate. I have only seen it in the one locality mentioned, our commonest species being the short tubed *C. Griffithii.*

Typhonium fultum, n. sp. A small herb with a short stem above the ground propped on strong roots. Leaves 5 or 6 ovate or deltoid hastate 2 to 3 inches long 2 inches wide deeply cordate, apex acute, lobes rounded, petiole $2\frac{1}{2}$ inches long. Peduncle $\frac{1}{4}$ inch long, spathe with a green base dilated $\frac{1}{4}$ to $\frac{1}{2}$ inch long, limb 2 inches long $\frac{1}{2}$ inch broad; subacute or acuminate purple-veined, tip green. Spadix about as long. Appendage orange brown cylindric from a thick base tapering upwards, below a short nude portion. Male portion of about 6 rows of oblong yellowish anthers, then a longer nude portion. Neuters numerous horn-shaped white up-curved. Females in one whorl oblong, one ovuled.

Selangor at the limestone caves near Kuala Lumpor (8165) also found in Lankawi Islands by Curtis.

This odd little aroid is remarkable for the stem standing up supported on its roots above ground after the manner of a Pandanus, a habit not observed in any other species, the rest of them having small underground tubers.

T. filiforme, n. sp. A very small herb, tuber globose $\frac{1}{3}$ inch through. Leaves 2 or 3 deltoid hastate acuminate, lobes divaricate acute 2 or 3 inches long, $\frac{3}{4}$ to $1\frac{1}{2}$ inch wide, petiole slender 2 to 5 inches long. Peduncle $\frac{1}{4}$ inch long. Spathe 3 inches, base elliptic $\frac{1}{4}$ inch long olive green, limb linear very narrow, apex eventually coiled up yellowish spotted with red. Spadix very slender $3\frac{1}{2}$ inches long, appendix ochre yellow filiform nearly 3 inches long, male portion short below them a long slender nude portion, neuters filiform contorted long, female flowers few oblong.

I found this at the foot of the limestone cliffs at Kuala Dipang in Perak. It is evidently allied to *T. bulbiferum*, Dalz., of the Concan, differing in the absence of any trace of bulbils, the longer appendage and neuters, and longer bare space below the male flowers.

Amorphophallus Malaccensis, n. sp. Tuber 4 inches through hemispheric with a depressed top. Leaves not certainly known. Peduncle 7 inches tall rough. Spathe tube wide trumpet-shaped 3 inches long, limb broad rounded six inches long and as wide. Spadix longer, appendage fusiform acuminate 6 inches long rugose hollow, loose textured and fibrous within. Male portion one inch long anthers crowded oblong. Female portion 2½ inches long. Flowers numerous, ovaries ovoid, style ¼ inch long.

I only know this from some dried specimens which were collected by a native collector on Bukit Panchor in Malacca. It belongs to the section including *Amorphophallus*, *Rex.*, and *campanulatus*, but is distinct in its longer peduncles, and longer narrower appendage. I have several times met with foliage of a plant very much resembling that of a *Rex* with a tall stout dark green scabrid petiole which may perhaps belong to this species. A very large spike of fruit over a foot longer with berries half an inch long which was obtained by Mr. Hervey on Bukit Payong in Malacca is very probably the fruit of this plant. It should be looked for again.

A. minor, n. sp. Tuber an inch through. Leaf petiole slender 9 inches long, blade three branched each branched again, leaflets numerous thin green (red when young) lanceolate acuminate inaequilateral 3 inches long by one inch wide, nerves numerous close joining an inner intramarginal one. Peduncle 8 to 12 inches long with loose brown sheaths at the base, the largest truncate 4 inches long. Spathe 3 to 4 inches long convolute at the base lanceolate acuminate 1 to 1½ inch across. Spadix 3 inches long. Appendage cylindric-conic an inch long. Male portion as long as the appendage. Flowers very numerous crowded. Females few. Style very short.

Perak on the Thaiping Hills; and in Province Wellesley at Tasek Gelugor. This is allied to *A. sparsiflorus*, Hook. fil., differing in the shorter appendage and longer male portion of the inflorescence.

A. carnea n. sp. Tuber hemispheric 3 inches across. Leaf unknown. Peduncle 3 inches and a half long, smooth gray green with brown blotches, sheath at base 2 inches long. Spathe 5 inches long, loosely convolute at the base with a broad limb pinkish with brown blotches, paler within. Spadix rather longer. Appendix conic obtuse 3 inches long 1 inch through at the base fleshed low obscurely cancellate. Male portion 2 inches long stout greenish. Stamens densely crowded. Female portion ovaries shortly pedicellate, broad flask shaped, style short and thick. Stigma lobed.

Lankawi Islands (Curtis). This plant was flowered from a tuber brought in with tubers of *Arisaema* from Lankawi Islands, in the Penang Gardens. I have only seen a drawing of it but I know nothing quite like it.

Alocasia ovalifolia, n. sp. Stem about a foot tall, leaves ovate cordate acute dark green one to 2 feet long 5 to 12 inches wide with 20 pairs of nerves, petiole stout over a foot long. Peduncle six inches long or less. Spathe 3 to 6 inches long, tubular portion 1½ inch long, limb 3 inches long ½ inch wide oblong obtuse. Spadix slender, appendage cylindric ¾ to 2 inches long. Male portion 1 inch long. Flowers oblong crowded, below them a nude portion. Female portion 1 inch long.

Johore, base of Gunong Panti; Selangor, Tras Route at the 15th mile (No. 8487), Ginting Peras, Bukit Kuta; Perak, Sungei Larut (Wray 2457), Larut Hills; Penang, Moniots Road (Curtis). Rather a dull looking *Alocasia* not uncommon in the hill woods.

Pothos inaequalis, n. sp. Stem rather slender much branched. Leaves elliptic oblanceolate with a long point and acuneate base intramarginal vein often far from the edge undulate with another very inconspicuous one close to the edge, main nerves often large and remote 4 to 7 inches long 1 to 2 inches wide. Petiole ½ to 1 inch long sheathing to the thick knee which is half an inch long Bracts several, upper one sheathing ½ inch long, lower ones small. Peduncle 1½ to 2 inches long fairly stout curved. Spadix an inch long cylindric dense flowered. Sepals cuneate with a broad flat triangular top. Pistil top broad rounded. Pahang, Pulau Tawar (2391).

P. ellipticus, n. sp. Stem fairly stout leaves elliptic cuspidate 5 inches long 2½ inch wide, pale green when dry, keel stout, base rounded, inner intermarginal vein some way from the edge, outer one close to the edge, parallel nerves fine and close. Petiole 3 inches long sheathing rather broadly to the knee ¼ inch long. Peduncle stout 2 inches or less deflexed. Spadix nearly sessile ¾ to 1 inch long thick cylindric dense flowered. Flowers fairly large. Sepals oblong with a broad inflexed top. Stigma discoid shortly elevated. Fruit oblong ½ inch long.

Pahang on the Pahang river, at Kuala Tembiling and Pulau Tawar.

P. grandispatha, n. sp. Stem slender less than ⅛ inch thick. Leaves lanceolate cuspidate 6 to 8 inches long, 2 to 2½ inches wide, cusp ½ inch long base narrowed blunt. Petiole 2 inches long sheathing rather broadly to the very short ½ inch knee, sheaths eventually breaking up into fibres. Peduncle slender 2 inches long. Spathe broadly ovate acuminate, apparently purple in life, narrowed at the base 2½ inches long 1 inch wide. Spadix very slender 1 inch long sessile. Flowers very small, sepals oblong truncate, style distinct with a small discoid stigma.

Penang, West Hill (Curtis). Allied to *P. brevistylus*, Engler. This plant is remarkable for its large spathe.

PANDANACEÆ.

Pandanus immersus, n. sp. A stout pandan growing immersed in water, the stem rising but little above, leaves many feet long broadly linear 4 inches across, glaucous beneath, acuminate with a long point, thorns numerous brown. Female spike solitary on a stout flexuous peduncle 2 inches long ½ inch through, oblong thick green 4 inches long 1½ inches through, carpels small with a very stout simple curved style $\frac{1}{8}$ inch long.

Selangor in the Labu River, forming dense thickets. Native name "Mengkuang Ayer."

P. bicornis, n. sp. Stems short, only one or two feet tall. Leaves dark green glaucescent at the top of the stem 2 feet or more long 2 inches wide broadly linear and tapering quickly into a very thorny tail 3 inches long, edge and keel armed especially at the base with numerous recurved thorns. Female bracts broad ovate, outer ones rather abruptly acuminate 6 inches long with a slender point 2 inches long thorny, inner bracts obtuse, head solitary oblong rounded at the top 4 inches long and nearly as broad green, carpels nearly $\frac{1}{2}$ inch through $\frac{3}{4}$ inch long top broad free obscurely angled. Style broad short with two spreading short sharp horns with broad bases about $\frac{1}{8}$ inch long.

Perak, Thaiping Hills in dense forest at 2500 to 3000 feet altitude.

P. aurantiacus, n. sp. A large branching shrub with stems 2 or 3 inches through and about 12 feet tall. Leaves over 3 feet long, $1\frac{1}{2}$ inch wide, glaucous green, linear long acuminate, tips deflexed, with numerous close-set short thorns on the edge and keel. Female inflorescence with a stout rachis about a foot long and five globose oblong heads $2\frac{1}{2}$ inches long 1 inch through, orange colored. Carpels large $\frac{3}{4}$ inch long, apex conic ending in a long stout but not very hard beak.

Singapore, Bukit Mandai Road; Johore, Tanjong Bunga (6288 of my collection); Perak, Larut Hills; also in Sarawak.

This grows on swamps on river banks usually near the sea, and is known in Johore as "Pandan Akar". This may possibly be the *P. Yvani* of Solms-Laubach (Linnæa XLII, 20) based on a plant collected by Yvan in Malacca, but the description is too poor to identify any pandan.

P. stelliger, n. sp. A slender stemmed pandan 4 to 10 feet tall, branched. Leaves linear acuminate shining grey green over a foot long and an inch wide, the point narrow 3 inches long, thorns distant except at the point which is very thorny. Heads oblong ovoid 2 inches long and over an inch through in a cluster of four nearly sessile. Carpels $\frac{1}{4}$ inch through the style oblong, top square with from 3 to 6 horizontal points sharp and rough at the tip.

Selangor, on the Tras Route at the 20th mile (8775;) Perak, Thaiping Hills at 2500 feet altitude in forests.

This was referred to *P. minor*, Ham., by the Kew authorities but differs in the clustered heads of fruits and the curious style which is quite flat and square at the top with from 3 to 6 horizontally spreading points.

P. glaucophyllus, n. sp. Stems 10 to 12 feet tall $\frac{1}{2}$ to 1 inch through. Leaves crowded at the top 1 to 2 feet or more long 2 inches wide glaucous broadly linear oblong, tip abruptly acuminate, edge minutely denticulate rather flaccid, midrib prominent with very small thorns, capitulum globose 2 inches long on a stout peduncle about 3 inches long. Fruit rounded tapering into a stout upcurved simple spine $\frac{1}{6}$ inch long grooved above the tip acute.

Perak, Thaiping Hills in dense forests, about 2500 feet altitude. Rather local, growing in small patches. Allied to *P. parvus*, Ridl, but very much larger in all its parts.

P. penangensis, n. sp. A tall stout tree about 20 feet tall and four inches through the stem. Leaves very long linear acuminate 6 to 12 or 14 feet long 4 inches across often especially when young marbled light and dark green, edges and keel armed with stout thorns crowded towards the tip of the leaves. Heads 4 or 5 together on a short peduncle, green oblong 6 inches long, 3 inches through. Carpels an inch long, free portion conic angled $\frac{1}{3}$ inch long. Styles strong simple hard dark brown polished curved forward $\frac{1}{2}$ an inch long.

Penang Hill from the base to the top, in woods. This resembles *P. furcatus*, Roxb., in habit but has a compound inflorescence.

CYPERACEÆ.

Mapania triquetra, n. sp. Stem ascending or erect 6 inches tall, trigonous broad from the very broad leaf. Sheaths 12 inch long and one inch wide green edged with pink. Petiole green 2 to 3 inches long, blade oblong dark green above, paler beneath, base broad apex rounded ending abruptly in a tail 1½ inch long, edges aculeate, whole blade 6 to 8 inches long, 2 inches wide. Scapes slender 3 inches long red. Head of flowers very small ½ inch long narrow. Bracts shorter lanceolate red. Squamellæ 6, two outer ones with ciliate keels. Stamens three white anthers twisted linear oblong. Style long. Stigmas 3 short.

Woods, Dindings, Lumut (Ridley), Pangkor (Scortechnii); Negri Sembilan, Bukit Tumiang (Cantley's collection); Penang Hill (Curtis). Also in Sarawak.

This pretty and curious plant has been confused with the common *M. humilis*, Naves and Villar, but is really totally distinct in the broad triangular stem shorter and broader leaf blade and the very small head of flowers.

Notes on a Cruise in the Southern China Sea.

C. Boden Kloss.

In 1900 I spent about eleven weeks, including the months of August and September, cruising about with Dr. W. L. Abbott in his Schooner "Terrapin" which had just been launched. Our purpose was to make collections of mammals and birds and of any other objects zoological that might fall in our way. As the islands of the Southern China Sea amongst which the time was spent, have received either but scanty notice or none at all, the following pages may have some interest. Unfortunately for the present purpose I kept only the very baldest log of our voyage so that the account of our experiences, drawn up after an interval of three years, is far from being as satisfactory as I could wish.

I was unable to accompany the schooner when she sailed at the beginning of July so arranged to join her at Linga, and in the middle of the month therefore left Singapore in the *S. S. Malacca.*

We stopped a night at Rhio *en route* and I was thus enabled to get from the Resident a permit to travel in the Rhio-Linga Dependency in which the whole of our cruise was to take place. The town of Rhio is prettily situated and laid out, but very small and quiet; it possesses an hotel and a good fruit-market: every other one of its shops appears to be run as a pawn-broking establishment. A long walk in the surrounding country showed me nothing more inviting than clayey hills covered with bracken and the S'ndudu tree (*Melastoma polyanthum*), and everywhere dotted with Chinese tombs.

From Rhio to Linga—we called at Sinkep Island on the way with provisions for the tin mines—was, I think, four days steaming through smooth seas and green islands. The *Macassar* is an old wooden tub capable of doing about 7 knots in calm water with the wind astern. The only accommodation she could offer was the open bridge crowded with natives, where I found room for a deck chair. Had this been all there would have been nothing to kick at, but unfortunately the vessel swarmed with a certain highly objectionable and active *Rhynchota* that spoilt all pleasure, and when I hailed with delight the appearance of the "Terrapin" lying off Tanjong Buton on the south side of Linga, I was, after four days of an inferno, in a state that I had never been in before and fervently pray never to attain again.

Linga.

Lying about mid-way between Singapore and Banka, Linga is an island of irregular shape about 33 miles in length in a north-west and south-east direction, and is surrounded by smaller islands of various sizes. Unlike its near neighbour Sinkep, it is not worked for tin, and is best known as being at one time the head quarters of the numerous pirates who used to ravage the western seas of the Malay Archipelago in the early part of last century.

The schooner had to anchor a mile or so from the land since off-shore for some distance extended banks of soft black mud through which we were compelled to wade when the tide was low while at other times the sea broke on them with some force for the roadstead is exposed to south-easterly winds. At Tanjong Buton were a few Chinese *kedais* and the house of a Dutch Assistant-Resident (now withdrawn) and from here a road had been made to the town of Linga.

The best collecting ground was on the outskirts of the village of Maruang, lying two or three miles away between the road and the sea. The surrounding country was, for the most part, a sago swamp, but in the fruit plantations of the Kampong certain birds and small mammals were numerous. The village itself consisted of a settlement of Sumatran Malays, the houses—about forty in number—built in two orderly rows with the mosque in the centre. The thousands of huge durian trees that surround it, were just then fruiting and at the little watch-houses in the plantations freshly fallen durians could be had in piles at a cent or two apiece while the few small steamers that call were constantly taking cargoes up to Singapore.

Learning from the people of the village that flocks of fruit-bats visited their fruit-trees nightly, we, one evening when there was a little moonlight, went up the plantation for the purpose of obtaining specimens.

Accompanied by half the boys of the Kampong, we took up places beneath a huge rambutan tree—the gathering point of great numbers of bats—but for a time made very poor practice at the dark bodies flitting between the branches in the dim light. Swarms of mosquitoes did not help to improve matters. At length however I hit on a plan that gave better results; choosing a large bunch of fruit that was freqently visited, I rested my gun against a convenient tree-trunk and took careful aim at it. Holding the barrels steadily in position all I had now to do was to stand up and watch the target: whenever a bat settled on that particular bunch I pressed the trigger and the shot was invariably followed by a thud on the ground or crashing and squawking among the branches as a wounded animal dropped slowly downwards. In a couple of hours the boys had picked up a dozen specimens of *Pteropus vampyrus* with which we returned to the boat, leaving sundry others to be recovered on the morrow.

On the way back a bullet was kept in readiness for wild-pig. None were seen, however, though nightly rootings along the road showed their presence in the neighbourhood.

The following day was given over to the preparation of skins and skeletons from the specimens obtained.

The 24th of July, our last day in the island, was spent in visiting Linga Kampong to bid farewell to the Sultan and to buy supplies for the voyage ahead.

The town is distant about an hour and a half from the sea and is reached by a road constructed by the Dutch Assistant-Resident. Although roughly made it is passable for the Sultan's gharry and for the few local rickshaws which, old and dilapidated, generally traverse it at a walking pace.

For the first two miles it runs though a swamp planted with sago palms, then coming out on hard clay ground is bordered with scrub and lallang until near the town it passes through plantations of various fruit-trees, sugar-cane and bananas.

Although the actual control is in the hands of the Dutch from whom he receives an income of some $80,000 a year, the Sultan of Linga is nominally ruler over neighbouring parts of Sumatra, all the islands between Sinkep and Singapore and all the various small groups in the Southern China Sea.

The town of Linga—his capital—is. situated on the banks of a stream navigable by small praus at high water, about two miles from its mouth. To the north a fantastically split peak, the highest summit of the Linga group, rises to a height of 3,921 feet, densely covered with jungle and scrub and scarcely ever free from clouds.

The population of the town, Malays and Chinese, number about 6,000. All the houses are built on piles, those of the Chinese on a muddy expanse by the banks of the river which not infrequently overflows. A number of substantial brick buildings have at one time also been erected by them but are now in a ruinous condition.

The houses of the Malays, shaded by fruit trees, arecas and coco-palms were scattered about without regard to orderly arrangement. Amongst them stood the school, which was apparantly well patronised, and the Sultan's palace, a large and ugly barn-like structure of wood.

The Sultan was absent and we proceeded at once to the Chinese portion of the town to get through with our marketing.

The Chinese community is under a "Captain China" who in the Linga Sultanate is responsible to the Dutch only for the good behaviour of his charge and who collects for them the poll tax of $3 a head every year.

The bazaar was of fair size and sold the usual merchandise found in such places that includes various articles ranging from a bottle of scent to an onion. Our requirements of rice, vegetables. curry stuffs etc., were soon satisfied and from the sarong shops kept by Klings we got a few European cotton sarongs for use on board. The Malays here were apparently like the lillies of the field. "They toil not neither do they spin," and it was with difficulty that we got from them even a few eggs and chickens.

We returned to the "Terrapin" by way of the river in a canoe with a small roof of kajangs. The water was very low and paddling between muddy banks we were unable to see anything of the country on either side. Crocodiles are said to be numerous but none were met and after crossing the bar at the river mouth, we got up sail and in short time reached the schooner.

Previous to my arrival Dr. Abbott had made an expedition to the peak. He spent eight days in a hut built at an altitude of about 1000 feet and ascended on three occasions to 3000 feet, but each time the mist was so dense that he could not proceed higher. Animal life was remarkably scarce in the mountain forest; the lotong, however, was seen occasionally and at the highest elevation reached the "house" of a pig was found. Birds were very few in number. The mountain seemed to offer most attraction to a botanist: orchids occurred in great abundance.

In order to give a complete list of the mammals known from Linga I have included here the further material obtained by Dr. Abbott during a second visit to the island in 1901. All species that were described for the first time from both collections are distinguished by the addition of sp. nov.

1. Semnopithecus maurus.
2. Macacus cynomolgus.
3. Pteropus vampyrus.
4. Tupaia tana.
5. T. malaccana.
6. Viverra tangalunga.
7. Arctogalidia simplex, sp nov.
8. Tragulus javanicus.
9. T. pretiosus, sp. nov.
10. Sus vittatus.
11. Ratufa notabilis, sp. nov.
12. Sciurus vittatus.
13. Sciurus tenuis.
14. S. notatus.
15. Rhinosciurus laticaudatus
16. Mus lingensis, sp. nov.
17. M. fremens, sp. nov.
18. M. firmus, sp. nov.

The birds of Linga show no peculiarities and do not differ from those occurring in the adjacent mainlands. The most complete collection recorded is that made by the native hunters of the late Mr. A. H. Everett. The list of species is given in "Novitates Zoologicæ."

Pulo Taya and the Nyamok Islets.

We left Linga at 2 a.m. on the morning of July 25th bound for a group of three small islands forty miles to the south-eastward. With the wind ahead all the way it was not until mid-day on the 26th that we anchored off Taya the largest of the three.

The island is fairly steep-to, of granite formation rising to a double peak about 600 feet high. It is about a mile and a half long north and south, oval in shape and covered with forest,

Landing on the east side on a sandy bay in a bight between the hills we found at the south end of the beach just within the jungle a spring of good water. Near the shore the bay was blocked up with coral over which at low tide we had to scramble. A little party of Orang Laut in their crazy praus, visiting the island for "ikan merah" for which it is well known, told us that rats, squirrels, and a "biawak" were to be got; but during the three occasions we were ashore we saw neither. The only birds obtained were the Nicobar *(Calœnas nicobarica)* and Nutmeg pigeons (*Myristicivora bicolor*), which last occurs on nearly all islands in this region: the glossy starling (*Calornis chalybeus*) with dark metallic green plumage and red irrides: a gaudy little sunbird (*Anthothreptes rhodolœma*), the Eastern reef heron (*Lepterodius sacer*), and *Halcyon chloris*, the blue-and-white kingfisher. Last and best of all was one specimen of *Columba grisea*, a bird of extreme rarity in collections.* In general appearance it is somewhat similar to the cream-and-black Nutmeg pigeon if the former colour were replaced by a pale grey.

On the Nyamok Islands about a mile north of Taya, two islets, the larger no more than two or three hundred yards in diameter, we shot a blue-and-white king fisher and the reef heron.

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* The British Museum Catalogue and Pigeons records a single specimen only.

These islets, neither of which is more than 150 feet high, are covered with thin jungle in which we saw several specimens of the Nicobar pigeon—the "burong mas" or golden bird of the Malays.

Taya was left at midday on the 28th and soon after making sail a squall from the south-west struck us. We ran before it, goosewinged with scandalised sails, the seas racing up behind and breaking in showers of spray under the counter. In the couple of hours it lasted we had made nearly twenty miles of our way to Pulo Pengiki Besar and afterwards sailing with a wind that allowed an easy course to be laid, anchor was dropped in a bay on the north side of the island at six o'clock on the evening of July 31st.

Pulo Pengiki Besar or St. Barbe Island.

Seen from a distance Pengiki appears like two or three separate islands, being lower at the centre than in the north-east and west. Its height is about 750 feet and it is covered with trees except at those places on the hill sides where large outcrops of rock occur. On such spots what vegetation exists is of a sparse and stunted type.

For some distance from the shore a reef filled up the bay where, indeed, the conditions are most favourable for the growth of corals. As one rowed over the pellucid green water, looking down they were to be seen in indescribable variety—great heads formed like massive boulders and tiny sprays no less delicate than a piece of moss. Corals of all shapes and shade were there—pink, grey, yellow, brown, blue, green, red, while among the crevices and branches swam fish as gorgeous as their surroundings—little fellows half an inch in length, blue, red, and yellow and others of larger size whose brilliancy of colouring passed almost unremarked by comparison with the grotesqueness of their forms.

In the centre of the bay and connected at low tide with the shore stood a rocky islet frequented by numbers of the white tern (*Sterna bergii*) with rose-tinted breasts from which the flush fades immediately after death.

From several small streams within the jungle good water may be obtained; they are, however, too weak to force a passage to the sea and must be looked for above the beach.

At Pengiki we spent two days but found the island, although of fair size—three miles long and nearly two wide—very scantily furnished with animal life. Pigeons both Nicobar and *bicolor*, were fairly numerous as were the glossy starling and blue-and-white kingfisher, but no other birds were seen with the exception of an eagle and a single grey wagtail. A python and viper were obtained and a glimpse was caught of a small animal in a tree that may have been a musang. Macaque monkeys (cynomolgus?) were, however, common and a new species of squirrel (*Sciurus mimiculus*), a dwarf form of *S. prevostii*, was obtained.

The jungle was of fair height but possessed scarcely any undergrowth and all day long in the cool green light, swarms of bats (*Hipposideros barbensis*, sp. nov.) flitted about circling in and out amongst the trees.

When we left—in darkness at three o'clock one morning—the anchor proved to be jammed fast in the coral. It was only by setting full sail, after all other means were exhausted, that we were enabled to break it free.

The Tambelans.

The Tambelan group, about sixty miles to the northward, was the next place of call. With a wind abeam and a squall to help we arrived in twelve hours and anchored between two small islands, Selendang and Gilla. Exploring the former in the afternoon we got two or three birds. It possesses a curious cone-shaped hill about 700 feet high; Gilla is much lower. The scenery in the little strait between the two was very lovely—jungle and coco palms, granite boulders and yellow sand, bright blue sea and waves of white surf at the far end of the passage.

Early next morning (Aug. 4th) we boated over to Great Tambelan and met many canoes going off to the outlying islands. The sea was running very high a few hours later and the sail back again was somewhat exciting.

The Tambelan group consists of the three principal islands of Tambelan, Bunoa and Wai, with a number of smaller islands massed fairly close together over thirteen or fourteen miles of sea. Only Great Tambelan is inhabited but on the others the people have numerous *ladangs* and *pondoks*. The population consists of Malays, 500-600 in number.

Bunoa.

As Gilla and Selendang were too small to be productive, after one more visit we transferred operations to Pulo Bunoa close by. The islands form roughly two parallel lines lying N. E. and S. W. Bunoa is the largest of the south-western group. It is about four miles long and two and a half wide, on the whole gently rounded in contour with gradual forested hills rising to a height of 900 feet. On the northern side is a bay that offers good anchorage in the S. W. monsoon.

We tramped through the island for three days after birds and beasts. A form of "Krah" was common and from those collected here, and later on in the Anambas, a new species *Macacus pumilus* has been described which differs from *M. cynomolgus* in being paler and much smaller. The little pied hornbill (*Anthrococeros convexus*) was numerous: their chattering resounded through the jungle like the yelping of puppies. Once in stalking them I lost my bearings and at last crossing a slight trail followed it up on the wrong hand and passing by a little stream that suddenly disapppeared subterraneously, came on a ladder path and log-slide running down a sleep hill side to a strange beach that in the end proved to be on the further side of the island. Thinking it easier to return to the boat by following the coast than by retracing my steps, I let myself in for a five or six miles scramble in mangroves and mud, over soft sand and rocks, across coral reefs and through water breast high before I found the schooner again.

Arenga palms are numerous in the jungle and are worked for sugar by the natives. The trees are tapped near the top and bamboo receptacles are fastened beneath the incisions to receive the sap. Here and there we came across the boiling-down furnaces that consisted of large flat iron pans raised above the fire on clay walls. Before concentration the sap is carefully strained through a bunch of fibre to remove impurities and is then boiled down either to a treacly consistency or to a still greater density when it is poured into bamboo moulds and crystallizes into a dark brown sugar.

A coconut shell of the warm sweet liquid in its early stage is most refreshing during the course of a hard tramp and was always offered when we passed a concentrator at work.

Great Tambelan.

On the 8th of August we made sail at day-break and with a native pilot crossed to Tambelan Island and anchored in the harbour three hours later.

This, the largest island of the group, is nearly 4½ miles long and roughly triangular. Near its north-east coast are several hills, the highest of which—Tambelan Peak—rises to an elevation of 1300 feet while a short distance to the eastward of it is Thumb Peak, a remarkable pointed hill 950 feet high. The island is nearly divided into two parts by an inlet of the sea which runs in a north-easterly direction into its western side. This creek is nearly a mile in width but is fringed and choked with reefs. The remains of a breakwater built of coral cross it about a mile and a half from the entrance. A stockade once ran behind this and a fort stood on the shore, all being constructed to defend the village which lies higher up, from the attacks of Illanum pirates who occasionally visited these islands years ago.

We threaded our way amongst the coral and anchored in a clear patch of water near a couple of small native schooners, well protected by reefs from any south-westerly swell and in sight of the Kampong. The conditions permitted some delightful baths in perfect safety for the Malays said crocodiles and sharks never ventured into the neighbourhood. The pilot refused money payment for his services but gladly received drugs for an ailing relative, and later when the people took to bringing us specimens they always preferred medicine of sorts by way of recompense.

We first landed on the southern side of the harbour and climbed a small hill of granite and laterite. It was covered with scanty scrub and absolutely devoid of life. A reward however lay in the view. Below the slope of the hill stretched the still green waters of the harbour, purple-patched with coral; on the further side sand, jungle and palms, while the Kampong—a long line of brown houses on land and water, following the course of the shore—lay higher up the creek. Beyond rose the jungle and hills, with the quaintly-shaped Thumb Peak—abrupt and solitary—standing out prominently against the sky.

A white man is a bit of a curiosity in these parts and for the rest of the day it was but seldom that twenty or thirty heads were not poked through the skylight windows watching our goings-on.

Next morning we went up to the village to visit the Dato and show him a letter written by the Sultan of Linga who, under the Dutch, rules all these islands.

A roofed-in platform with benches and flight of steps forms a pleasant landing and lounging place before the village, near which was anchored a stranger vessel—a little prau about the size of our whaleboat packed with a large and unprepossessing family of Orang Laut.

From the *jambatan* we were led to the Dato. The village consists of about 250 houses threaded by tidy paths and supplied with water by numerous bamboo *penchurans* leading from the higher ground in the rear. No women were visible but from the houses came the clacking of numerous looms: good strong sarongs are made here, dyed, however, with aniline colours purchased in Singapore: indeed though Dutch possessions, the Straits dollar was the only coin current in all the islands of our cruise. Passing the mosque, a pucca triple-roofed structure of wood and stone, and a number of old cannon that lay scattered about, we reached the Dato's, a well-built shingle-roofed house, with a long enclosed verandah running its length, in which we were welcomed.

The Dato was an amiable old gentleman, treated by his people as he treated the Sultan's letter—with great respect. Chairs were arranged at one end of the room and when we took our seats the lower end was crowded by the populace while women stared through the latticed windows of the inner rooms. An official, bent double with respect, read the Sultan's hukum, which explained our object and recommended all assistance, and then the Dato and the audience descanted on the local fauna, its paucity in those islands and how much better off other places—Pahang, for instance—were in this respect. On leaving, the hand-camera was brought into play for the first time and all the juveniles among our escort fled screaming.

The little community appeared to be very well off and was one of the few places remarkable for the absence of the ubiquitous Chinaman, a solitary trader of which race seemed to have been recently starved out. On the shores of the harbour twenty to thirty schooners of local construction were drawn up: these seemed to be owned by the villagers in general, and with them all the trade was done and all the produce shipped from time to time to Singapore direct.

Ship-building bulked large as an industry of the village and we saw half a dozen or more hulls from thirty to forty feet in length, in all stages of construction. These vessel are built of locally grown chengai and merbau and are fastened with tree-nails throughout. Each seemed to be the work of about a couple of men in partnership and takes two years or so to complete. A few frames are first set up and completely planked and afterwards the other ribs are fitted in until sufficient strength is attained. It was said that a 35 foot craft (10-tonner) could be purchased all complete for $350, and although perhaps their lines were capable of some improvement they were fine roomy little boats strongly built of throughly sound material. The local canoe, however, was a thing of beauty: strongly built of two prettily contrasting white and brown hardwoods without a single nail, with upward-projecting stem and stern and gaudily painted bird's-head bracket on the bow to support the lowered sail and mast, it was as workmanlike as it was handsome. The sail was a square cotton lug slung by the middle of the yard and set with the forward end of the boom snubbed down to the lee-bow well forward.

Having sent the Dato a photograph of the "Terrapin" we received a call one evening from him and his understudy to acknowledge the picture and to obtain a little medicine. Amongst other things he told us how in his boyhood the village suffered the last attack from pirates and how all the inhabitants were driven out by the raiders to a hill at the back of the island where they built a fort of refuge. In those days there were only about a hundred people on the group.

But little was to be obtained by way of supplies from the villlage. Coconuts and copra were plentiful, eggs and fowls scarce: we could get plenty of bananas and one evening bought from a canoe homeward bound from fishing, three splendid parrot fish (*Scarus sp.*), weighing together between sixty and seventy pounds for a dollar!

The jungle was intersected with paths leading to the arenga palms and trying-down sheds and by shooting along them and in the cocopalms we obtained a new squirrel (*Sciurus abbottii*), a pale form of *S. notatus*.

After investigating the birds and mammals on several occasions with good results, we devoted a morning to butterflies getting about a dozen species round the village and along the forest paths. The fauna of the island was neither numerous nor diversified and on the morning of the 15th we moved the schooner over to Pulo Wai, anchoring off its N. E. coast.

Pulo Wai.

This island is the most north-westerly of the group. It is about two miles long and rises in several peaked hills attaining near the eastern end a height of 1000 feet. Being farther from the Kampong than the others it is least visited but plantations of coconuts and bananas, plantains, yams and sweet potatoes are common on its hillsides, a good deal of which are cleared.

It provided us with a handsome squirrel (*Sciurus mimellus* sp. nov.) with black, chestnut and white pelage—a dwarf form of the well-known *S. prevostii.*

A walk across the island proved very bad travelling but from the hills a distant view was obtained of Gap Rock about twelve miles to the northeast. This remarkable islet consists solely of two huge boulders—the larger of which is 124 feet above the water—lying on a flat platform of rock utterly devoid of soil or vegetation.

This was the last of the Tambelans visited and I will therefore conclude this notice of them with a list of the principal collections.

Mammals.

1. Macacus pumilus, sp. nov.

2. Pteropus lepidus, sp. nov.
3. Megaderma spasma.
4. Tupaia bunoæ, sp. nov.
5. Tragulus sp. (said to occur).
6. Sciurus memellus. sp nov.
7. Scinrus abbottii, sp. nov.
8. Mus tambelanicus, sp. nov

Birds.*

1. Gracula javanica.
2. Eulabes javanicus.
3. Calornis chalybeus.
4. Hypothymis azurea.
5. Hirundo javanica.
6. Motacilla melanope.
7. Halcyon chloris.
8. Anthrococeros convexus.
9. Cypselus sp.
10. Osmotreron bicincta.
11. Carpophaga ænea.
12. Myristicivora bicolor.
13. Chalcophaps indica.
14. Calænas nicobarica.
15. Turtur tigrinus.
16. Esacus magnirostris.
17. Totanus hypoleucus.
18. T. calidris.
19. Lepterodius sacer.

The Rocky Islets.

Eleven miles in seven hours is not good sailing but it was afternoon when we landed on the Rocky Islets—the Pulo Mandariki of the Malays. They consist of two small barren islets and a rock. The sea is steep to all round and the schooner lay on and off with a kedge anchor hanging down while we carefully humoured the swell and jumped ashore on the larger of the two, which is northernmost. The central islet which is next in size is much more broken and is a wild confusion of little peaks and precipices.

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* It is interesting to note that no birds smaller than the fly catcher have effected a lodgement on the Tambelan group.

Climbing to the top of our islet (134 feet) we found that quartz predominated in its formation, which presented an exceedingly rough surface where grew here and there only the scantiest tufts of coarse grass. Two or three dead bushes crowned the summit and everywhere the ground was fouled with the guano of sea-birds that use the rocks as a breeding place.

The air was full of squalling, squawking, croaking gulls and among the crevices of the island's surface we discovered numbers of nestlings, and a few eggs all addled. The birds were of two kinds:—a black noddy with grey head (*Anous stolidus*) and a tern (*Sterna* sp.) with black head and wings, grey back and grey-white breast. The remaining fauna included fishing-eagles, crabs and a solitary bee. The mid-day sun, shining down on the bare rocks, made the heat, combined with the scent of the birds, overpowering and we soon left, having knocked over sufficient specimens for the collection in a very few minutes.

Saddle Island.

Instead of proceeding straight to the Anambas we stopped for a night and morning at Pulo Kayu Ara, a little island about half a mile long covered with jungle and thus contrasting strongly with the place we had just left. It is nearly 400 feet high and is formed of two round hills having a dip between that make together a contour from which it has gained its English name.

The feet of the hills were fringed with black rocks but between lay a delightful little beach inhabited by a pair of white-collared kingfishers, on which we landed and found the laying places and tracks of turtles: the sea, of wonderful limpidity invited to a bath. The only birds seen in the forest were fruit pigeons and glossy starlings,—the only terrestrial mammal a squirrel (*Sciurus klossii*), a small blue-bellied member of the *notatus* group. The trees bore considerable quantities of fruit, particularly noticeable being wild nutmegs and mangosteens, the last of which seemed to form the principal food of the squirrels. To complete the tale of our acquisitions were the small fruit bat (*P. lepidus*) previously taken in the Tambelans, some geckoes and two or three tree-snails.

Waiting until the tide turned in one favour we left in the afternoon, bound for the Anambas, a hundred miles away. Until sunset next evening the wind held light but then with a series of squalls coming up from astern we made from six to seven knots an hour, the breeze constantly shifting a point and back and compelling us to make continual gybes. Late at night we entered the channel between Pulos Peling and Riabu and dropped anchor close to the former.

The Anambas Islands.

On the morning of the 17th it was evident that we were fortunate to have anchored when we did; for dead ahead, just a hundred yards away, an abrupt bit of coral reef on which the schooner could have piled up very awkwardly, lay five or six feet beneath the surface.

Pulo Peling, which we worked for a day, is only a small island without inhabitants where clearings were just being commenced; we saw no mammals except many monkeys, but got a little blue brown flycatcher (*Cyornis tickelli*) with reddish breast for the first time on the cruise.

Riabu, which we next prospected, is much larger, being high and about six miles in length. It possesses a very good bay affording excellent harbourage in the S. W. monsoon as it is only open between N. and W. As we rowed along the shore we shot a large "baiawak" from the boat and then landing found the country very rocky and densely covered with forest. Our best catch was a squirrel—the only one seen—a pale and rather small form of *Sciurus notatus*. It has been named *anambensis* and occurs on most of the islands of the Anambas group but the Riabu specimen differs from the others in having the audital bullæ markedly smaller.

At daylight on the 19th there was scarcely a breath of wind and after getting up anchor we nearly drifted on to the reef through which we had so nearly come to grief before, but missing it with the rudder by a bare yard we soon afterwards got a fair breeze and, running past eight or ten small islands, made Terempa, which is the chief kampong of the Anambas, by 2 p. m.

The Anambas Islands are situated in lat. 3°N., long. 106 E. and extend over an area 65 geographical miles long N. and S. and 55 miles wide. They practically form two groups of which, though the western includes the larger island, the other is greater in area. All the islands are hilly, covered with forest, and afford numerous bays and channels where safe anchorage may be found in spite of the coral reefs that occur everywhere. Although the population is mainly confined to the larger islands, Malays are thinly scattered over most of the rest and there are Chinese Settlements in either group.

Siantan.

Terempa lies in a little bay on the north coast of Siantan which is the largest of the easterly Anambas, having probably an area of about 20,000 acres: it is densely covered with heavy forest, is very hilly and rises 1855 feet.

The kampong is a thriving little place with a Chinese cemetery, twenty or thirty Chinese shops with galvanised iron roofs and a good proportion of its population Chinese. A small steamer the "Banka" calls once or twice a month and yet it is against these islands that the dear old China Seas Directory (3rd edition) still contains the antediluvian warning that "it is dangerous to land without due precaution, for the Malays who reside on them may probably massacre or make slaves of strangers if they perceive a convenient opportunity." *A propos* of this sort of thing I remember once asking a Danish sailor whom I met on the other side of Sumatra whether he used the English Admiralty publications for these seas, but the skipper of that very old-fashioned little barque the "Hans of Fano" shook his head and replied that he always consulted certain continental sailing directions as our own were far too obsolete and scrappy.

Terempa is built along the head of the bay and has a small saltwater creek opening out behind it. As one faces it from seaward an orderly street of Chinese stores with the opium-farmer's place and a Chinese school lie to the left with a few

Malay houses at the far end. In the centre is the Dato's house —a wooden building in civilised style; a large house belonging to the Sultan of Linga and then stretching away on the right the houses of the bulk of the Malays: behind the flat on which the village is built, hills covered with jungle and coco palms rise steeply in a half circle, the whole having a very pretty effect which, however, is quite matched by the view presented from behind the town from whence looking down the long slope of the hill one sees the roofs of the houses, the semi-circular bay with boats lying at anchor, and then across a strip of water the forested hills that rise opposite.

A mile and more to the north of Siantan lie the two fairly large islands of Mobur and Mata with a channel about a mile wide between them. Between Mata and Siantan runs a very pretty strait which although obstructed by many islets and shoals at its eastern end, has deep water in the west where Terempa Bay is situated. Not only in the latter itself can a vessel lie in deep water sheltered from all winds, but beyond the point forming its eastern shore is another bay where a ship can anchor in 10–15 fathoms near the beach, entirely land-locked. Better harbours on a small scale could not be wished for and wood and water are close at hand.

The Dato of Terempa was in an advanced state of consumption and in spite of possessing a new and rather showy house lived in a second more modest dwelling. He showed us specimens of black iron ore of which large quantities were said to occur in the hill behind the village.

We could get various supplies here, thanks to the presence of the Chinese; extremely good coconuts* were plentiful and water was at hand in a large pool on the beach. The only practicable shooting ground near at hand was mostly covered with small scrubby jungle in which we shot squirrels and a number of fairly common birds and trapped plenty of rats. I met with bees in this place and was put out of action for a day or two in consequence, for while chopping at a liana that crossed the path I disturbed a swarm that were clinging to it a little to one side. They were about me in an instant and though by retreating to the sea at an unaccustomed pace I shook off the majority, nevertheless those that had secured a hold made things sufficiently painful and my right hand and arm were so swollen that for a time I could do nothing with them.

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*This group of islands would appear to be a convenient place for obtaining seed nuts to form a coco-palm plantation. The Malays always maintain, and apparently with some show of reason, that island nuts are far superior to those of the mainland. Some of the Anambas nuts are very good, in fact, almost equal those of the Nicobars: though small, they are extremely sweet and the deposit of flesh is very thick.

The canoes of these islands were very similar to those of the Tambelans; they differed principally in having a much higher stem and stern and were shallower, lighter and narrower, with much less beam forward than aft, and they were propelled with a double-bladed paddle. The sampan used by the Chinese was of a very bulky model with an elongated and upward pointing prow: it sailed under a battened dipping-lug.

Having been told by a son of the Sultan of Linga who was staying in the village, of a large waterfall on the east side of Siantan we set out at sunrise one morning to visit it in the whale-boat. The wind was dead ahead and we had to pull all the way—about eight miles—but the result was well worth the labour. The way lay right up the channel between Siantan and Mata, then a short distance down the east coast and finally an approach by a passage through mangroves that enabled us to bring the boat to the very foot of the falls themselves. Bordered by jungle these fell in a series of cascades down a bare strip of rock about 400 feet high. There were twelve or thirteen falls in all and their chief charm lay in their variety—broad ribbons of foamy water slithering over smooth faces of rock, long threads dropping uninterruptedly from a height, and series of little cascades tumbling down flights of stone steps, while here and there in between were delightful cool-looking pools, seeming so inviting after our hot row that we feet compelled to have a swim, following the example of the fish that had somehow found their way there.

The raja had agreed to accompany us but was late in setting out, though he arrived before we left and we both started together to sail back, as this time the wind was fair. We were not long in company however, for the other boat—curiously, built in Singapore in the same yard as our own—a little larger and with more sail soon left us behind and we reached home badly beaten.

The days between August 24th and September 5th were passed in visiting the northern island but on the latter date we sailed round Siantan and the islands extending from its south-east extremity since the channel on the north was untraversable, drifting on a reef on the way in a calm but easily getting off by the use of a kedge anchor, and in the evening putting in at Telok Ayer Bini, a bay on the sonth coast partially protected by an island at the entrance.

The shores rose very steeply and were uncleared except in one or two places where the people of a house there had made gardens and planted hill rice. It was hard work climbing about the slopes which were rendered excessively slippery by rain that continued incessantly throughtout our stay. A stream with two arms ran into the head of the bay and up one we rowed until stopped by a small cascade, while the other was merely an almost dry bed of granite boulders.

The wretched weather made specimens scarce and after three or four unprofitable days we sailed on our final visit to Terempa. Four more days were spent here working fresh ground and making fairly good collections of mammals and birds and then we left for Pulo Telaga to the westward.

Mobur.

The 24th of August was the first day of our stay at Mobur Island, about 5 miles to the northward of Siantan. Like all the Anambas it is hilly with a broken surface covered with forest, and on the south it is cut into by a narrow gulf with an islet at the entrance; a notable feature of the western group is the number of these inlets and narrow channels that occur. Good as the harbour was with depths of 12 or more fathoms we passed up the strait separating Mobur from the larger Mata and anchored in a big bay on the north side, landlocked for more than three quarters of its perimeter. Four or five miles seawards we could perceive the Tokong Belauer, a remarkable white rock bearing at a distance a most extraordinary resemblance to a modern battleship. We found coco palm and banana plantations on the island but very few inhabitants, for the people are mainly confined to Terempa and only isolated settlers occur elsewhere.

One afternoon we rowed to a little island in the bay called Langor. It was only about 100 feet high and consisted of sand and rocks covered with scrub and a few coco palms. Everywhere the ground was strewn with pigeon's feathers and by waiting we found that large flocks of the orange-breasted pigeon (*Osmotreron bicincta*) came off at sunset from surrounding islands and used this spot as a roosting place in company with smaller numbers of glossy starlings and nutmeg pigeons. The whirring noise made by the wings of the flocks as they flew round and round the island, disturbed by our shots, was very great and continued until we departed with bags stuffed with birds that appeared later in a most delicious stew.

Kelong, Manguan and Tobing.

We next sailed round the north end of Mata and anchored between it and Pulo Kelong, a narrow island about 5 miles long in a N. and S. direction and less than a mile wide : the ground sloped upward to a ridge 600–700 feet high and every where the soil and jungle were very poor. Most of the channel dividing Kelong from Mata is filled with sand banks and coral, dry at low tide. Fishing-stakes had been set up here and there by the Malays but to us the place proved a good ground for the common shore birds of this region and we also collected a number of beautiful starfish while our crew hunted for trepang and chopped tridacnas out of the coral. Other animal life was scarce and we soon moved southward to Pulo Manguan, a small island shaped like a dumb-bell, flat and swampy in the centre; but doing no better there, anchored the schooner off Tobing, an islet near the eastern entrance of the Siantan channel, and from thence again visited the waterfall, and next day, previous to sailing for the south of Siantan, rowed to Terempa and back for our mails.

Telaga.

The second stay at Terempa concluding on the 13th of September we made for Jimaja, the chief of the westerly Anambas, first however after a few hours sail stopping about mid-way, at a group of small islands of which Telaga is chief. This is a norrow hog-backed island about 5 miles long N. and S. with a picturesque peak rising 1740 feet near its northern end. We spent a couple of days here and on the neighbouring island of Midai finding the forest fairly open except for patches of rattans and a prickly holly-like shrub. Only one village of three or four houses was seen. The coconuts seemed much troubled with squirrels and the people made use of an ingenious trap set on a long bamboo leading from the jungle to the palm trunks.

Jimaja.

On the 16th we made sail at daybreak and rounded the southern end of Telaga. The wind was ahead but we did most of the seventeen miles, which is the distance between that island and Jimaja, in one board and then working short tacks got close to the entrance of Kwala Maras Bay on the east coast by nightfall. After that the wind fell light and the tide carried us away to the northward so we let go the anchor in 10 fathoms about three-quarters of a mile from shore and next morning after a couple of hours beating got into the bay. A line of rocks extends above water from the north shore and beyond them on the other side is a coral reef: we found a good berth between the two, well protected from all but easterly winds.

Jimaja is the largest of the Anambas with an area of perhaps 30,000 acres. It is of an irregular Y-shape about 14 miles N. and S. and 9 miles wide. The contour is very uneven and there are many peaks between 700 feet and 1530 feet, the greatest elevation attained in Gunong Tujoh. The irregularity of the coast line has resulted in many bays, the largest being in the north and in the south-east, but Telok Kwala in the centre of the east coast, although smaller than these is the most important as having the greatest population and being the port of call of the steamer. Its shores rise steeply to heights of 1000 feet in places free from forest, but beyond the head where a river embouches is some flat swampy land overgrown with mangroves.

The kampong lies on the north shore and consists of thirty to forty houses, a small mosque, the Dato's house and the buildings of the opium-farmer—shop, godowns, etc., surrounded by a stockade 8-10 feet high closely built of small saplings from whence ran a small jetty.

The Dato's was a well built house, the largest in the place, with a flag staff in front. We were given the rarely used chairs brought out, as always, from somewhere in the roof and seated on these awaited the Dato who was making himself presentable. He was a rather big man with an Irish countenance and wore a "baju tangan kanching" having a ridiculous resemblance to the obsolete night shirt, and a purple smoking cap whose large black tassel persisted in lying in his right eye. There were only a few people in the audience and after the Dato had stumbled through the Sultan's letter and the scholar of the party recorded our visit in the brown-paper-covered archives of Jimaja, conversation took a zoological turn and we were told also of two deep lakes with waterfalls that existed up in the hills of the interior, the description being such as to give one an idea of something impressive.

We collected first on the south side of the bay with no great result; the ground was very steep and difficult and the forest small having evidently been cleared at some former period. However, a new species of rat—*Mus flaviventer*—was obtained and we came across parrots (*Paleornis longicauda*) for the first time. Every day flocks crossed the bay and passed near the summit of some steep rocks where I several times lay hid in the vain hope that they might stop. It was interesting to note how the parrots' call as they flew by always drew a loud response from all the small birds roosting in the bushes.

On the other side of the bay we found a good path running for some distance through a former mangrove swamp now planted with coconuts, and afterwards up hill amongst most beautiful jungle. It crossed two small streams of perfectly clear water one running among granite boulders and the other, about a foot deep, in a smooth sandy bed. Toward midday nothing was more pleasant after five or six hours' tramping in the forest than to find a round stone for pillow and recline full-length in the flowing water of the latter until thoroughly refreshed by its coolness. But beside providing pleasure of this sort we also obtained good specimens along its banks.

Our third collecting ground was along the river falling into the head of the bay. At first this was bordered by broad growths of tall mangrove, but after a mile or so where the current began to make itself felt these ceased and the vegetation became more varied with interminglings of nipahs, palms, and fruits trees. Onward from here the stream—the Sungei Maras—runs up the centre of a winding valley with a narrow strip of flat land at the bottom and steeply rising sides. At the head of navigation—and in fact when the tide was low we had to wade with our dinghy for some distance, though all the way the stream was broad enough to use oars—was a village of eight or ten houses and a mosque, one or two of the former being of large size and well built of panels of carved wood, though now old.

In the valley we got specimens of the parrots at last as they fed in the fruit trees bordering the river, and also a lovely little two-toed kingfisher (*Ceyx rufidorsa*) with coral red beak and feet, yellow breast and brick red head and back that were tinged with a beautiful glossy lilac: the best of the bag however were specimens of a big squirrel (*Ratufa anambœ* sp. nov.) black above with tawny yellow cheeks and underparts. It weighs about 3¼lbs with a total length of 33 inches of which head and body are 15 inches: thus, contrary to the general rule, it is an insular race characterised by increase of size. In these China Sea islands it is found that when a species of mammal occurs in a solitary island, however small that may be in area, it is confined to that island alone, but when a species is present on an island of a group it will generally be obtained throughout the group. In the case, however, of the *Ratufa* of Jimaja this is not so; it was neither reported nor did we find it ourselves on any other of the Anambas.

On the 25th we set out early in the morning with the intention of seeing what truth there was in the report given us of the "telaga" in the centre of the island. The first stage was to the village up river—Kampong Ayer Maras—where the Penghulu provided us with a guide. While waiting for the latter we inspected a small waterfall about 20 feet high at the back of the village. It was not much to look at however as there was very little water in it at the time. We were then told that there were two series of lakes, so voted for the larger set and when the guide arrived started him off accordingly.

The path traversed sago swamps for the greater part of the way and was very muddy; then passed through a small kampong surrounded by fruit trees and soon after that through a stream where a sago-making apparatus was erected, next came thickets of dense scrub followed by another sago plant where a number of men were at work. Now the track degenerated into a muddy ditch knee deep for the most part and after crossing several brooks we came to the bank of a small river with a clean sandy bed. When we had waded upward for some distance the bed became rocky and we then soon reached the "lakes." These were disappointing being merely large rocky basins in the river bed about 60 feet long and 30 feet wide and, as we found by diving, 17 or 18 feet deep. They were connected by a fall and there was a second above the upper pool both some 30 or 40 feet high. The water was perfectly clear and the whole very pretty, rock and water being shaded and hedged in by dense jungle, nevertheless the actual state of affairs was not quite the phenomenon it had been painted by our informants.

We found the steamer in the bay when we got back and her serang came off with a message from the commander that we had stolen his anchorage! As however we had been there some time and the other was still under steam we returned word that we felt no inclination to move; thereupon the steamer's master obstinately took up a berth a few yard off until he swung with the tide when, our main-boom end doing considerable damage to his bridge dodger, he was persuaded to seek a more convenient anchorage.

Both in the Tambelans and in Siantan we had made efforts to get one of the canoes of the place without avail, people did not want to sell or would not be ready in time. Here as a last chance one of the built up kind was to be had for $40, though graceful dugouts on exactly the same lines were just half that while rough models could be purchased for as little as $3. One canoe, a good example of the type—was brought alongside with the sail lightly rolled up and bound round and round with every conceivable cord; undoing this tangle of course showed the cotton to be mildewed and full of holes and the chagrined vendor was sent off for another. There was further trouble in concluding the purchase as the islanders would not accept either Dutch coin or Singapore notes and we had run completely out of Straits money. Happily a couple of Tringanu men visiting the island in a small prau were willing to change our notes on condition that we invested in sarongs from their trade-stock. Having with the assistance of these men—who contrasted greatly with the islanders in many ways—brought the canoe business to an end we left Jimaja on September 28th and sailing round the south of the island reached Singapore on October 8th via Tiuman where we spent a few days.

The principal result of our visit to the Anambas lay in the first record of the animals and birds found in them, an outcome of our investigations being also the description of many new insular species. So far as is represented by the collections the mammal fauna of these and of the other islands visited consists of local forms of the widely distributed and characteristic Malayan types. Each island and group of islands has its representative of the common genera and species; but in scarcely an instance is an insular race identical with that occurring on another island, unless of the same group, or on the mainland.

Mammals of the Anambas.

Macacus pumilus.
Nyctecebus tardigradis.
Emballonura anambensis, sp. nov.
Rhinolophus minutus, sp. nov.
R. rouxii?
Tupaia chrysomella, sp. nov.
Paradoxurus, sp. (reported).
Tragulus, 2 sp. (reported).
Sciurus anambensis, sp. nov.
S. tenuis.
Funambulus castaneus, sp. nov.
Ratufa anambæ, sp. nov.
Mus siantanicus, sp. nov.
M. strepitans, sp. nov.
M. anambæ, sp. nov.
M. flaviventer, sp. nov.

Birds.

The birds obtained were all common peninsular forms and are enumerated below.

Malacopterum magnirostra.

Anuropsis sp.
Mixornis gularis.
Ægithina viridissima.
Pycnonotus simplex.
Iole sp.
Dissemurus platurus.
Orthotomus atrigularis.
Lanius cristatus.
Eulabes javanensis.
Calornis chalybeus.
Hypothymis azurea.
Cyornis tickelli.
Cittocincla macrura.
Munia semistrata.
Hirundo gutteralis.
H. javanica.
Motacilla melanope.
Anthothreptes rhodolæma.
Æthopyga siparaja.
Æ. hasselti.
Dicæum trigonostigma.
Halcyon bengalensis.
H. chloris.
Ceyx rufidorsa.
Cypselus subfurcatus.
Collocalia fransica.
Macropteryx longipennis.
M. comata.
Rhamphococcyx erythrognathous.
Graculus sumatrensis.
Palæornis longicauda.
Loriculus galgulus.
Spizaëtus or Spilornis sp. (observed).
Haliäetus leucogaster.
Osmotreron bicincta.
Carphophaga ænea.
Myristicivora bicolor.
Calænas nicobarica.
Chalcophaps indica.

Charadrius fulvus.
Ægialitis sp.
Esacus magnirostris.
Totanus calidris.
T. hypoleucus.
Strepsilas interpres.
Tringa hypoleuca.
Fregata aquila (observed).
Anous stolidus.
Sterna bergii.
S. media.
Lepterodius sacer.
Buteroides javanicus.

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A List of the Butterflies of Borneo with Descriptions of New Species.

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Part I.

(DANAINÆ TO AMATHUSIINÆ).

Only three lists of the butterflies of Borneo that can pretend to any completeness have been published hitherto. One by Messrs. Distant and Pryer appeared in the "Annals and Magazine of Natural History" 1887; another by Messrs. Pryer and Cator in the "British North Borneo Herald" of 1894—a list remarkable for the number of *nomina nuda* contained in it, and a third by Mr. E. Bartlett in the "Sarawak Gazette" of 1896, reprinted in the "Zoological Note-Book of Sarawak" by the same author. All three lists are now out of date and many new species have been described even since the compilation of the last one; for example Mr. Bartlett records only 139 Lycænidæ, whereas the number of species of this family now known from Borneo just exceeds 300. Consequently I feel justified in adding to the literature on Bornean Lepidoptera, especially as I do not expect that many more discoveries of new species will be made in the future in an island that has been so well explored faunistically as Borneo; in short, this list has some claim to completeness and finality.

A few new species are described for the first time, and as considerable trouble has been taken in consulting all available literature on Oriental butterflies and as most of the specimens have been referred to Dr. A. G. Butler and Mr. F. A. Heron, of the British Museum, and by these well-known authorities declared to be in every probability undescribed, I trust that my new species are really "good species."

The question of nomenclature has been rather a difficult one; the systematist has to steer between the Scylla of "lumping" and the Charybdis of "splitting," for to regard all geographical varieties (topomorphs) of a wide-spread species as identical is unscientific, to regard each variety, on the other hand, as a separate species is almost equally unscientific and, further, tends to obscure the problems of geographical distribution. There is a third alternative and that is, to adopt the cumbersome trinomial system, distinguishing well-marked topomorphs of a wide-spread species as sub-species, giving them separate names* and noting the distribution of the species as a whole. Such is the method adopted in this list; a species is recorded, if the typical form occurs in Borneo that fact is noted and the distribution of the typical form and the sub-species (component parts of a species) occurring outside Borneo are also noted; if the typical form does not occur in Borneo, the name of the sub-species that does occur follows the name of the species and the distribution of the species as a whole is recorded.

Unfortunately some of the families of butterflies have not been studied so thoroughly as others, whilst some families again have been studied from a different point of view to others: for example, Messrs. Elwes and Edwards in their "Revision of the Oriental Hesperiidæ" (Trans. Zool. Soc Vol. XIV part IV, 1897), do not allow a single sub-species, whereas Hon. W. Rothschild and Dr. K. Jordan in their memoirs on the Papilioninæ and on the Nymphaline genera, *Eulepis*, *Charaxes*, etc., regard every topomorph of a wide-spread species as a sub-species and this to my mind appears to be the more scientific method. Much work along these lines still remains to be done, but it can be done only by one who has frequent access to extensive collections and well-stocked libraries, therefore though this list lays claim to some completeness so far as an *enumeration* of the forms of butterflies occurring in Borneo goes, it does not claim in every instance to discuss the relationships between these Bornean forms and close allies inhabiting other areas.

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* For an able exposition and defence of the trinomial system of nomenclature see Novitates Zoologicæ Vol. IX. Supplement, 1903, pp. xxvi et seq.

At the end of this list will be given a table showing at a glance the geographical distribution of the various species. A few field notes are put in square brackets after the records of distribution of the respective species.

I am indebted to Mr. F. Moore and to Herr H. Fruhstorfer for their kind help; the late Mr. L. de Nicéville was a most valued correspondent whose sound advice and generous aid I sadly miss now.

LEPIDOPTERA RHOPALOCERA.

Fam. NYMPHALIDÆ.

Sub-fam. DANAINÆ.

Genus *Hestia*.

1. *Hestia lynceus*, Drury.

H. lynceus, Drury. Illustr. Exot. Ent. ii. pl. 7 f. 1 (1773).
H. reinwardti, Moore, P. Z. S. 1883, p. 218.
Sub-sp. *H. lynceus druryi*, Moore, with a melanic form *fumata*, Fruhst.

Fruhstorfer (Berl. ent. Zeitschr. Bd. xlii. p. 314. 1897) divides *H. lynceus* into five sub-species occurring in Malacca, Penang, Singapore, Nias, Sumatra, Mentawei Is., Natuna Is., Borneo and Java. The species is a common one and the Bornean sub-species with its melanic form is distributed throughout the island; *H. lyn. druryi* occurs also in Sumatra and the Natuna Is.

[Two males were observed courting a female in the jungle at Santubong: the female was situated on a leaf about 12 feet from the ground, over her a pair of males fluttered with a peculiar short up-and-down flight as if they were sliding on perpendicular wires; the female slowly opened and closed her wings but otherwise remained immoveable for about three minutes when she suddenly dashed off with the males in hot pursuit, and all three were soon lost to sight].

2. *Hestia belia*, Westw.

H. belia Westwood. Cab. Orient. Ent. pl. 37. fig. 2

Sub-sp. *H. belia hypermnestra*, Westw.

Sub-sp. *H. belia belina*, Fruhst.

The typical form of *H. belia* occurs in Java and Sumatra, the two sub-species mentioned above in Borneo, another (*H. bel. linteata*, Butl.) in the Malay Peninsula, and a fourth in Java. Distant (Rhop. Malay p. 406) records *H. linteata*, Butl. from Banjermassin, but this is probably the same as sub-sp. *belina.*

Genus *Nectaria.*

3. *Nectaria leuconoë*, Erichs.

Idea leuconoë, Erichs. Nova Acta. Ac. Nat. Cur. xvi p. 283 (1834).

Sub-sp. *N. leuconoë nigriana*, Grose-Smith.
North Borneo, Taganac Island.

Sub-sp. *N. leuconoë chersonesia*, Fruhst.
South Sarawak, Malay Peninsula, Singapore and adjacent islands, Billiton.

Sub-sp. *N. leuconoë natunensis*, Swell.

I am not at all certain that the varieties and local races of this species are all worthy of sub-specific rank; *Natunensis* in especial seems to possess no well-marked characteristics. In the Sarawak Museum collection there is a male from Buntal, Sarawak, which might be either *nigriana* or *natunensis* and a female from Trusan, N. Sarawak is intermediate in character between *nigriana* or *chersonesia.* Other sub-species occur in Japan, Philippines Palawan, Talaut, Sangir, Java, Engano.

The species frequents the sea-shore.

Genus *Ideopsis.*

4. *Ideopsis daos*, Boisd.

Idea daos, Boisduval, Spec. Gén. Lep. I, pl. 24. f. 3 (1836).

Borneo and Lingga Archipelago, with sub-species n, Singapore, Penang, Malay Peninsula, Sumatra, Niasi China, Hongkong.

The Natuna island forms appears to belong to another sub-sp. *I. daos perakana*, Fruhst.

[This common and distasteful species is mimicked by a Chalcosiine moth, *Isbarta pieridoides*, and by the female of *Papilio delesserti*].

Genus *Danais*.

Sub-genus *Radena*.

5. *Danais* (*Radena*) *vulgaris*, Butl.

Danais vulgaris, Butler., Entom. Month. Mag. xi, p. 164, (1874).

A common and widespread species, occurring in Singapore, Malay Peninsula, Sumatra, Java, Nias and Natuna Islands.

[This species and *Parantica eryx*, Fab., are mimicked in Borneo by the following butterflies :—*Elymnias lais*, ♂, *Euripus halitherses*, ♂ and *Papilio megarus*].

6 *Danais* (*Radena*) *juventa*, Cram.

Papilio juventa, Cramer. Pap. Ex. ii, pl. 188 B. (1779).

A common sea-side species, ranging nearly all over the Malay Archipelago.

Sub-genus *Tirumala*.

7. *Danais* (*Tirumala*) *septentrionis*, Butl.

Danais septentrionis. Butler, Ent. Month. Mag. vol. xi, p. 163, (1874).

Occurs also in India, Ceylon, Burma, Siam, Malay Peninsula, Java, Sumatra, Formosa.

Mimicked in Borneo by :—*Papilio macareus macaristus.*

8. *Danais* (*Tirumala*) *microsticta*, Butl.

Danais microsticta. Butler, Ent. Month. Mag. vol. xi, p. 163. (1874).

Occurs also in Java and Nias.

Fruhstorfer considers this to be merely a sub-species of *septentrionis*.

Sub-genus *Limnas.*

9. *Danais* (*Limnas*) *chrysippus*, L.

Papilio chrysippus. Linnæus. Mus. Ulr. p. 263, (1764).

[This very widely distributed insect is common in N. Borneo but of extreme variety in the more southern parts of the island; it is interesting to note that the females of *Hypolimnas misippus* which mimic it very closely are hardly ever met with except in N. Borneo though the males are somewhat less rare in the southern part of the island; in other words, the local distribution of the mimics closely follows that of the model].

Sub-genus *Salatura.*

10. *Danais* (*Salatura*) *plexippus* L.

Papilio plexippus, Linnæus Mus. Ulr. p. 262, (1764).

Sub-sp. *D. plexippus intensa*, Moore.

The typical form ranges from Japan through India to the Nicobars, it occurs also in the Philippines. The sub-species *intensa* occurs only in Borneo, Nias and Java; another sub-species is found in Malacca, Singapore and Sumatra.

11. *Danais* (*Salatura*) *melanippus*, Cr.

Papilio melanippus, Cramer, Pap. Exot. ii. pl. 127 fig. A. B. 1779.

Sub-sp. *D. melanippus hegesippus.*

Fruhstorfer (l. c. 1899 p. 74) has united these two old species. The typical form of *melanippus* he restricts to Java, Nepal, Assam and Penang? (fide Marshall and de Nicéville). The form *hegesippus* occurs in Sumatra, Singapore, Natunas, Malay Peninsula, Penang, Billiton, Mergui Is., and is now recorded for the first time from Borneo. Another sub-species occurs in Burma, Orissa and Bengal.

12. *Danais* (*Salatura*) *lotis*, Cr.

Popilio lotis, Cramer, Pap. Exot. p. 111, pl. 230, Fig. D. E. (1777).

The typical form is confined to Borneo, sub-species occuring in the Philippines and Celebes.

Sub-genus *Bahora.*

13. *Danais (Bahora) aspasia*, Fab.

Papilio aspasia, Fabricius, Mant. Ins. ii, p. 15, n. 145 (1787).

Ranges from Burma, to the Philippines and Banca.

[Mimicked by the female of *Nepheronia lutescens.*]

D. (*Bahora*) *cleona*, Cram., is a Moluccan species and has been wrongly recorded from Borneo. I cannot agree with Fruhstorfer in regarding *D. aspasia* as merely a sub-species of *D. cleona.*

Sub-genus *Parantica.*

14. *Danais* (*Parantica*) *eryx*, Fab.

Papilio eryx, Fab. Ent. Syst. Suppl. p. 423. (1789).

Occurs in Borneo with a sub-species in Nias.

Sub-genus *Caduga.*

15. *Danais* (*Caduga*) *crowleyi*, Jenner Weir.

Caduga crowleyi. Jenner Weir. Entomologist, 1894, p. 109.

The species is confined to Borneo, occurring on Mts. Kina Balu and Penrissen. Fruhstorfer considers this to be merely a sub-species of *D.* (*Caduga*) *melaneus*, Cr., but this must be quite wrong for *D. melaneus* is a typical Caduga, with both patches of scent-scales on the hind-wing traversed by a lengthened swelling of the vein (cf. Moore, Lepidoptera Indica, p. 60). Whilst in *D. crowleyi* only the patch on the sub-median vein is so traversed, the patch on the internal vein is almost obsolete, whilst that on the lower median vein is large and spatulate as in *Parantica*; in short *D. crowleyi* is not a true Caduga at all.

16. *Danais* (*Caduga*) *luzonensis*, Feld.

Danais luzonensis, Felder, Wien. Ent. Mon. iv. p. 398. n. 17 (1860).

Sub-sp. *D. luzonensis præmacaristus*, Fruhst.

From N. Borneo. (Mt. Kina Balu) and Mt. Penrissen. The Bornean form has been confused with the Javan *Caduga larissa*, Feld., another sub-sp. of *luzonensis*; other sub-species occur in the Lesser Sunda Is., Sumatra and the Malay Peninsula; the typical form is confined to the Philippines and Palawan.

[The species was common on Mt. Penrissen and often flew in company with *Caduga crowleyi; Elymnias lais* ♂ mimicked both species.]

Genus EUPLŒA.

Sub-genus *Menama.*

17. *Euplœa* (*Menama*) *lorzæ*, Moore.

Menama lorzæ, Moore, P. Z. S. 1883, p. 265, pl. 31, fig 5.

Occurs in North Borneo only.

Sub-genus *Tronga.*

18. *Euplœa (Tronga) crameri*, Lucas.

Euplœa crameri, Lucas, Rev. Zool. 1853, p. 318.
Tronga brookei, Moore, P.Z.S. 1883, p. 268, n. 8.
Tronga labuana, Moore, l.c. p. 268, n. 9.
Tronga daatensis, Moore l.c. p. 268, n. 10.

I agree with de Nicéville & Fruhstorfer in uniting the Labuan and Daat Is. forms with the mainland species *crameri*, and with de Nicéville in sinking *brookei* as another synomym. *E. crameri typica* is confined to the Philippines, Borneo and the Natunas, with doubtful sub-species ranging from India to all the Sunda Islands.

[This and the following species are mimicked by:—*Hypolimnas anomala* ♀, *Elymnias pellucida, Papilio paradoxus telesicles* ♀ ab. *russus* and ab. *leucothoides, Papilio leucothöe ramaceus* and the Chalcosiine moth *Isbarta macularia.*]

19. *Euplœa* (*Tronga*) *bremeri*, Feld.

Euplœa bremeri, Felder, Wien. Ent. Monat. iv, p. 398, n. 16 (1860).

Tronga pryeri, Moore, P.Z.S. 1883, p. 269.

The differences between specimens in the Sarawak Museum of *E. bremeri* (*E. Marsdeni*, syn.) from Singapore and *E. pryeri* from British North Borneo are so small and so inconstant that I have no hesitation in writing the two species under one name. Fruhstorfer divides the Trongas into two groups :—

1. Hindwing with a prominent row of submarginal dots.
2. Hindwing with a double series of very large clear white spots.

In the former group he places *E. bremeri*, as a sub-species of *E. Crameri*, in the latter he places *E. pryeri*, yet all the specimens of *E. bremeri* that I have seen should be placed in group 2. In any case the species is rather a doubtful one. It ranges from India through the greater part of the Indo-Malayan region.

Sub-genus *Adigama.*

20. *Euplœa* (*Adigama*) *scudderi*, Butler.

Crastia scudderi, Butl. Journ. Linn. Soc. Zool. xiv, p. 297 (1878). Confined to Borneo.

[Mimicked by the *Chalcosiine moth*, *Amesia hyala*].

Sub-genus *Penoa.*

21. *Euplœa* (*Penoa*) *uniformis*, Moore.

Penoa uniformis, Moore, Lepid. Ind. vol. i, p. 99 (1890). Confined to Borneo; possibly only a sub-species of *E. alcathöe*. God. or *E. ménétriésii*, Feld.

[Mimicked by *Elymnias lutescens* and *Mimeuplœa tristis*].

22. *Euplœa* (*Penoa*) *zonata*, Druce.

Euplœa zonata, Druce, P.Z.S., 1873, p. 338. Confined to Borneo.

[Mimicked by *Papilio slateri hewitsoni*].

23. *Euplœa* (*Penoa*) *masina*, Fruhst.

Euplœa (*Penoa*) *masina*, Fruhstorfer, Berl. Ent. Zeit. XLII, 1897, p. 16. Confined to Borneo.

Sub-genus *Trepsichrois.*

24. *Euplœa (Trepsichrois) claudius* Fab.

Papilio claudia, Fabricius, Gen. Ins. p. 263, (1777).

Sub-sp. *E. claudius mulciber*, Cr.

The typical form occurs in India, Burma, Siam, Malay Peninsula, Sumatra and some of the lesser Sunda Island; the sub-species *mulciber* is confined to Borneo, other sub-species occur in Southern India, Java, Nias, Mentawei Island and the Philippines.

[The pupa is a most brilliant object, of a bright burnished gold reflecting like a mirror, with spots and dashes of reddish brown and orange. It is nevertheless not at all conspicuous, since it is always suspended from the underside of a leaf and gives the effect of a hole in the leaf through which the sun is shining. I shall never forget my astonishment, when, on one occasion I attempted to thrust my finger through such a hole and encountered instead the resistance of a large and apparently brilliant pupa.

The *imago* is widely mimicked, the following is a list of the mimics :—

Males. *Euripus halitherses* ♀ *forma cinnamomeus*, *Hypolimnas anomala* ♀, *Elymnias borneensis*, *Papilio paradoxus telesicles* ♂, *Pompelon subcyanea*, *Callamesia striata* ♂.

Females. *Elymnias lais* ♀, *Papilio paradoxus telesicles* ♀, *Callamesia striata* ♀].

Sub-genus *Calliplœa.*

25. *Euplœa (Calliplœa) adyte*, Boisd.

Euplœa adyte, Boisduval, Bull. Ent. Soc. Fr. 1859, p. 156.

Sub-sp. *E. adyte aristotelis*, Moore.

No less than sixteen sub-species of *E. adyte* are distinguished by Fruhstorfer, ranging all through the Malay Archipelago to Melanesia : *aristotelis* is confined to Borneo—*natunensis* occurs in the Natuna Is.

Sub-genus *Macroplœa.*

26. *Euplœa* (*Macroplœa*) *corus*, Fab.

Papilio corus, Fab. Ent. Syst. iii, p. 41, (1793).

Sub-sp. *E. corus butleri*, Moore, (*Syn. E. Godmani* Moore).

This sub-species is confined to Borneo; the typical form occurs in Ceylon and other sub-species range from Burma through the Malay Peninsula and Sunda Islands to Palawan and Celebes.

Sub-genus *Danisepa.*

27. *Euplœa* (*Danisepa*) *diocletiaus*, Fab.

Papilio diocletianus. Fabricius. Ent. Syst. III. 1, p. 40, n. 118 (1793).

Papilio Radamanthus. Fabricus, Ent. Syst. III. 1, p. 42, n. 127 (1793).

Sub-sp. *E. diocletianus lowei*, Butler.

The typical form according to de Nicéville occurs in India, Burmah, Indo-China, Malay Peninsula, Sumatra, Billiton, Banka, Natuna Is. The sub-sp. *lowei* is confined to Borneo. *E. schreiberi*, Butler, has been wrongly recorded from Borneo, it is apparently confined to the island of Nias.

[As I pointed out elsewhere* the females of *E. diocletianus lowei* are extremely rare whilst the males are common; in Singapore both males and females of *E.* (*Dan.*) *diocletianus*, Fab., are common. It is at least curious that the female *lowei* should differ noticeably from female *E. diocletianus* whilst the males of both form are almost identical.

The species is mimicked by:—Males:—*Euripus halitherses* ♀ *forma pfeifferæ*, *Papilio caunus mendax* ♂,

Females:—*Euripus halitherses* ♀ *forma euplœoides*, *Papilio caunus mendax* ♀ *Mimeurplœa* and also *hadamanthus*].

From Borneo; it occurs in Nias.

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*Journ. As. Soc. Straits Br., No. 35, p. 31.

Sub-genus *Salpinx.*

28. *Euplæa* (*Salpinx*) *leucostictos*, Gmel.

Papilio leucostictos Gmelin (Pap. L.) Syst. Nat. I. 5, p. 2289, n. 889 (1788-1791).

Sub-sp. *E. leucostictos syra.* Fruhst.

Sub-sp. *E. leucostictos kadu.* Esch.

The typical form occurs in Java. I have taken the form *syra* on Mt. Matang. *kadu* occurs in N. Borneo, Palawan and Philippines and is another proof of the Philippine element in the N. Bornean fauna.

Sub-genus *Isamia.*

29. *Euplæa* (*Isamia*) *aegyptus*, Butl.

Euplæa ægyptus, Butler, P. Z. S. 1866, p. 277.

Occurs in Borneo, with sub-species in Billiton and Philippines including Palawan.

[The species is synaposematic with *E. Crameri* and is mimicked by the same species of butterflies and moths].

30. *Euplæa* (*Isamia*) *lowei*, Moore.

Isamia lowei, Moore, P. Z. S. 1883, p. 316.

Confined to Borneo, possibly a sub-species of *ægyptus.*

31. *Euplœa* (*Isamia*) *rafflesi*, Moore.

Isamia rafflesi, Moore, P. Z. S. 1883, p. 314.

Sub-sp. *E. rafflesi sophia*, Moore.

Borneo and Sumatra, other sub-species occur in Singapore, Nias, and Mentawei, the typical form occurs in Java—De Nicéville (J. A. S. B. vol. lxx, 1901), considers all the above species to be synonymous with *Isamia chloë*, Guér. from Malay Peninsula.

Sub-genus *Stictoplœa.*

32. *Euplœa* (*Stictoplœa*) *dufresnei*, Godt.

Danais dufresnei, Godt. Euc. Méth. ix. Suppl. p. 815 (1823).

Sub-sp. *E. dufresnei tyrianthina*, Moore.

The sub-species occurs only in N. Borneo, where there is a distinct Philippine element. The typical form occurs in the Philippines, other sub-species in Sumatra, Java, Lombok, Sumba, Sumbawa, Alor, Palawan.

Messrs. Pryer and Carter in their list recorded *E. binotata*, Butl., from N. Borneo, but this is certainly erroneous as the species is otherwise only known from N. India. They also record *E.* (*Stictoplæa*) *susah*, n. sp. which, however, is a mere *nomen nudum*, no description of the insect being given.

Sub-fam. SATYRINÆ.

Genus *Mycalesis.*

Sub-genus *Satoa.*

33. *Mycalesis* (*Satoa*), *maianeas*, Hew.

Mycalesis maianeas, Hewitson, Exot. Butt. iii, p. 87 *Myc.* t. 5, f. 27, 28 (1864).

Occurs also in the Malay Peninsula and Sumatra.

Sub-genus *Orsotriænā.*

34. *Mycalesis* (*Orsotriæna*) *medus*, Fab.

Papilio medus, Fabricius, Syst. Ent. p. 488, (1775).

Ranges over the Indian regions, Malay Peninsula, Sunda Islands, Celebes, Timor, Philippines and Hainan. The dry season form (*runeka*, Moore) does not occur in Borneo.

Sub-genus *Calysisme*

35. *Mycalesis* (*Calysisme*) *perseus*, Fab.

Papilio perseus, Fabricius, Syst. Ent. p. 488 (1775) ♀

Various authors record this species from Borneo, but I have not yet met with it. It occurs in the Indian region, the Malay Peninsula, Sunda Is., Philippines, Hainan and Formosa. The dry-season form does not occur in Borneo.

36. *Mycalesis* (*Calysisme*) *polydecta*, Cram.

Papilio polydecta, Cramer, Pap. Exot ii, pl. 144 Fig. e. f. ♀ (1777).

In the Sarawak Museum collection is a long series of this species, corresponding very well with the figures 1b, 1d, 1e, 1g. of Plate 61, in Moore's *Lepidoptera Indica* The species appears to have been previously recorded from India and Ceylon only ; its validity is rather doutful.

Sub-genus *Culapa*.

37 *Mycalesis* (*Culapa*) *mnasicles*, Hew.

Mycalesis mnasicles, Hewitson, Exotic Butt. iii, *Myc*. pl. 5, figs. 32, 33 ♂ (1864).

The species is also recorded from Upper Burma, Tenasserim, Malay Peninsula and Sumatra.

Sub-genus *Martanda*.

38. *Mycalesis* (*Martanda*) *janardana*, Moore.

Mycalesis janardana, Moore. Cat. Lep. Mus., E. I. C. i, p. 234, (1857).

Previously unrecorded from Borneo, Dr. R. Hanitsch collected two specimens at Kiou, Kina Balu. Other localities: Malay Peninsula, Singapore (Davison), Java, Sumatra, Celebes (Hose).

Sub-genus *Mydosama*.

39. *Mycalesis* (*Mydosama*) *fuscum*, Feld

Dasyomma fuscum, Felder, Wien. Monats. iv, p. 401, (1860).

Malay Peninsula, Singapore, Sumatra, Borneo.

40. *Mycalesis* (*Mydosama*) *anapita*, Moore.

Mycalesis anapita, Moore, Cat. Lep. Mus., E. I. C. i, p. 232, (1857).

Malay Peninsula, Sumatra, Borneo.

41. *Mycalesis* (*Mydosama*) *pitana*, Staud.

Mycalesis pitana, Staudinger, Iris. vol. ix, p. 230, 1896.

Mt. Kina Balu. I have only seen one specimen captured by Dr. R. Hanitsch at Kiou, Kina Balu.

Sub-genus *Nebdara.*

42. *Mycalesis* (*Nebdara*) *amœna*, Druce.

Mycalesis amœna, Druce. P. Z. S. 1873, p. 339, pl. 32, f. 1. Confined to Borneo.

43. *Mycalesis* (*Nebdara*) *kina*, Staud.

Mycalesis kina, Staudinger. Iris. vol. v, p. 451 (1892). Mt. Kina Balu.

Sub-genus *Suralaya.*

44. *Mycalesis* (*Suralaya*) *orseis* Hew.

Mycalesis orseis, Hewitson, Exot. Butt. iii, p. 89, *Myc.* pl. 6, figs. 36, 37, ♂ (1864).

Occurs also in Tenasserim, Malay Peninsula, Sumatra, and Nias.

Genus *Neorina.*

45. *Neorina lowi*, D. & H.

Neorina lowii, Doubleday and Hewitson, Gen. D. Lep. p. 369. pl. 61, f. 4 (1851).

Originally described from Sarawak, sub-species occur in the Malay Peninsula and Sumatra, and in Nias.

Mr. W. Doherty (J. A. S. Bengal 1889, p. 124) suggests that this species is a mimic of *Papilio helenus* and writes " it may possibly be advantageous for a scarce rather weak-flying insect of *Morphid* or *Satyrid* affinities to resemble a common *Papilio* of powerful and irregular flight"; as far as my experience goes *N. lowi* is much more common than *Papilio helenus*, it is in fact one of the common butterflies of W. Sarawak.

Genus *Cœlites.*

46. *Cœlites nothis*, Westw.

Cœlites nothis, Westwood, Doubleday and Hewitson's Gen. D. Lep. p. 367, pl. 66, f. 2 (1851).

Sub-sp. *Cœlites nothis epiminthia*, Westw.

The typical form occurs in Siam, *epiminthia* in Borneo, Sumatra and the Malay Peninsula and other sub-species in Borneo and Tonkin.

47. *Cœlites euptychioides*, Feld.

Cœlites euptychioides, Felder, Reise Nov. Lep. iii, p. 499, (1867).

Borneo, with a sub-species in the Malay Peninsula.

Genus *Lethe.*

48. *Lethe mekara*, Moore.

Debis mekara, Moore, Cat. Lep. Mus., E. I. C. i, p. 219, (1857).

Occurs in Sikkim, Assam, Khasias, Burma, Malay Peninsula and Borneo. The dry-season brood does not occur in Borneo.

49. *Lethe cerama*, sp. n.

♂ *Upperside;* very similar to dry season forms of *Lethe mekara*, Moore, from Upper Burma, but of a richer brown and the ocelli on the hind-wing, smaller, but less diffuse. *Underside*, almost exactly the same as in *Lethe delila*, Staud. but the ground-colour is paler and the lilac suffusion less bright; the sub-marginal ocellus on the hind-wing is smaller. Expanse 72 mm.

♀ *Upperside ;* forewing, rufous brown merging into fuscous at apex and external margin ; hindwing, rufous brown with the abdominal margin pale fuscous and the lower two-thirds of the external margin pale ochreous. The six sub-marginal ocelli of the underside are indistinctly seen on the upperside, the first two as ill-defined black discs, the third as a small black pupil with surrounding ring, the fourth and sixth are hardly visible, the fifth as a large black pupil with surrounding ring. A black marginal line. *Underside;* as in the male, but very much paler, the first ocellus on the hind-wing larger. Expanse 68 mm. *Habitat:* Kuching, Sarawak. Types in the Sarawak Museum.

The male might readily be confused with *L. delila*, Staud. but the female is so very different to the female of that species that I have little hesitation in separating this low country form from the mountain species *L. delila*. The genus *Lethe* is in need of careful revision, a work that is, however, only possible to one who has access to the types of the various species.

50. *Lethe delila*, Staud.

Lethe delila, Staudinger, Iris. vol. ix, p. 225, pl. v, f. i. (1896)

Mt. Kina Balu.

51. *Lethe europa*, Fab.

Papilio europa, Fabricius, Syst. Ent. p. 500, (1775).

Occurs in the Indian region, Malay Peninsula, Siam, Sunda Is., Philippines, Hainan, Formosa, China.

52. *Lethe perimede*, Staud.

Lethe perimede, Staudinger, Iris. vol. ix, p. 226, (1896).

Apparently confined to Borneo.

53. *Lethe darena*, Feld.

Lethe darena, Felder, Reise Nov. Lep. iii, p. 498, pl. 68, f. 4.5 (1867).

Sub-sp. *Lethe darena borneensis*, Staud.

The typical form occurs in Java; the sub-species occurs on Mt. Kina Balu.

54. *Lethe dora*, Staud.

Lethe dora, Staudinger, Iris, vol. ix, p. 226 (1896)

Borneo only.

Genus *Ypthima*.

55. *Ypthima pandocus*, Moore.

Ypthima pandocus, Moore, Cat. Lep. Mus. E.I.C. i, p. 235, (1857).

Malay Peninsula and the Sunda Is.

56. *Ypthima fasciata*, Hew.

Ypthima fasciata, Hewitson, Trans. Ent. Soc. (3) vol. ii, p. 287, n. 12, (1865.)

Malay Peninsula, Sumatra and Borneo.

57. *Ypthima abnormis*, sp. n.

♀ *Upperside;* fuscous, without ocelli; the hind-wing is clothed with long hairs especially along the internal margin.

Underside—pale brown with dark fuscous striæ which on the forewing are segregated in three areas to form indistinct fasciæ—a sub-basal, a discal and a sub-marginal; on the hind-wing the striæ form five indistinct fasciæ,—a basal, a sub-basal, two discal and a marginal. There are no ocelli. The abdominal margin of the hind-wing is rather deeply excised and the outer margin is slightly sinuate. Cilia fuscous. Expanse, 57 mm. *Habitat*, Kuching, Sarawak.

This is a very abberrant species of *Ypthima*; it has been suggested to me that it is merely a seasonal variation but as I shall have occasion to point out later, the Bornean butterflies do not show seasonal variation; all the species of *Mycalesis*, for instance, correspond to the wet-season phase of the same species, from other countries where the distinction between the fine and wet monsoons is better marked than it is here; the dry-season phases of these species are not found in Borneo.—Type in the Sarawak Museum.

Genus *Ragadia*.

58. *Ragadia crisia*, Hübn.

Euptychia crisia, Hübner, Zutr. Ex. Schmett. f. 675, 676, (1832).

Occurs in the Malay Peninsula, Penang, Singapore. The commonest species of the genus.

59. *Ragadia annulata*, Grose-Smith.

Ragadia annulata, Grose-Smith, A. M. N. H. 1887, p. 435. N. Borneo.

60. *Ragadia melita*, Staud.

Ragadia melita, Staudinger, Iris. vol. v., p. 449 (1892).

N. Borneo and Kina Balu.

Genus *Erites*.

61. *Erites argentina*, Butl.

Erites argentina, Butler, Cat. Satyr. B. M. p. 188, pl. 5, f. 8 (1868).

Upper Tenasserim and Borneo.

62. *Erites elegans*, Butl.

Erites elegans, Butler, Cat. Satyr. B. M. p. 147, pl. 2, f. 4 (1868).

Confined to Borneo.

63. *Erites thetis*, sp. n.

♂. *Upperside*; semi-transparent cinereous, on the hind-wings the colour and markings of the underside are seen shining through; a yellow ringed, white pupilled, black ocellus occurs between the second and third median nervules with two much smaller but similar ocelli beyond it.

Underside; forewing of same colour as on the upperside, more transparent at base and this area is crossed by numerous irregular striae; two indistinct ochreous bands cross the wing, one is medial the other post-medial; a row of five sub-marginal small ocelli extends from below 5th sub-costal nervule to the first median interspace, they increase in size from above downwards; a marginal pale band. Hind-wing; basal areas and abdominal margin covered with fine fuscous striae; a medial ochreous band crosses the wing; the outer half of the wing is ochreous; a row of four black ocelli with silvery centres extends from below the 2nd sub-costal nervule to the first median interspace, the lowest of the series is large and has a fuscous suffusion bordering its inner half, the other ocelli are minute; a marginal fuscous line. Cilia on forewing cinereous, on hind-wing yellowish-white. The hind-wing is dentate and subcaudate. Expanse 48 mm. *Habitat*: Kuching, Sarawak. Type in the Sarawak Museum.

Genus *Melanitis*.

64. *Melanitis ismene*. Cram.

Papilio ismene, Cramer, Pap. Exot. i. pl. 26. figs a. b. (1775).

This common species ranges throughout India, Ceylon, Burma, Andamans and Nicobars, Malay Peninsula, Sunda Is., Hainan, Formosa, Philippines, China and Japan.

[Both the dry-season form *ismene* and the wet-season form *leda* occur in Borneo, but irrespective of the season; I have taken both forms on the same day in the middle of the wet-monsoon and in the middle of the fine monsoon, in fact the two forms fly together. The form, markings, and colouration of the imagines of these seasonal varieties are dependent on the degrees of damp or dryness to which the young stages (egg, larva and perhaps pupa, are subjected, hence a spell of wet weather in the fine monsoon—an event by no means unusual—would produce a brood of wet-season forms and conversely a spell of fine weather in the wet-season a brood of dry-season forms. *M. ismene* in its dry-season phase is remarkably leaf-like, and the insect has the habit of settling amongst fallen leaves and leaning, with both wings closed, over to one side, so that its phyllomorphic appearance is very much increased].

65. *Melanitis zitenius*, Herbst.

Papilio zitenius, Herbst, Natursyst. Schmett. viii, p. 5, pl. 182, f. 1, 2 (1796).

This species has previously been recorded only from the Indian region and the Malay Peninsula. The Sarawak Museum collection includes one female in the wet-season phase.

Sub-fam. ELYMNIINÆ.

Genus *Elymnias.*

66. *Elymnias nigrescens*, Butl.

Elymnias nigrescens, Butler, P. Z. S. 1871, p. 520, pl. 42, f. 1.

The typical form occurs in Borneo, sub-species are found in the Malay Peninsula, Indo-China, Hainan, Sumatra, Billiton, Lombok, Flores, Sumbawa, Sumba.

This is a non-mimetic species in Borneo, and it is quite the commonest species of the sub-family.

67. *Elymnias hecate*, Butl.

Elymnias hecate, Butler P. Z. S. 1871, p. 520, pl. 42, f. 2. Confined to Borneo.

This species according to Fruhstorfer is merely a mountain form of *E. nigrescens*, however it is by no means confined to mountains, as it occurs at Labuan and Kuching as well as on Mts. Mulu and Kina Balu and I prefer to look upon it as a distinct and good species.

68. *Elymnias panthera*, Fab.

Papilio panthera, Fabricius. Mant. Ins. II, p. 39, n. 40, 407 (1787).

Elymnias lutescens. Butler, A. M. N. H. 1867, p. 404, pl. 9, f. 10.

Sub-sp. *E. panthera labuana*, Staud.

Labuan, Sandakan and Kuching, Sarawak.

The typical form occurs in Malacca, Sumatra, Singapore and Natuna Is., sub-species in Java, Banguey, Sulu Archipelago, Palawan, Upper Tenasserim, Nicobars, Nias, Bawean, Engano.

69. *Elymnias dara*, Dist.

Elymnias dara, Distant. A. M. N. H. 1887, p. 50.

The male has never been described; a description of a specimen taken in Kuching follows :—♂ Smaller than ♀ and darker. *Upperside*, dark purplish-black, fasciae on both wings as in ♀ but narrower and shorter and with a lilac tinge.

Underside, dark chocolate, the spot on the costal margin smaller than in the ♀, fascia on the fore-wing not so extended. Expanse 57 mm.

The species is confined to Borneo. *E. daedalion*, de Nicév. from Burma is possibly a sub-species. Both *dara* and *daedalion* belong to Moore's sub-genus *Melynias*, not to his genus *Elymnias* as erroneously stated in Lep. Ind. vol. II, p. 154, 155.

70. *Elymnias brookei*, sp. n.

♂. The outer margins of both wings are scalloped; the outer margin of the forewing is produced in the first median interspace into a slight lobe; the outer margin of the hind-wing is produced at the third median nervule to form a short tail. No modified scales on upperside of forewing; androconia on upperside of forewing as in *E. nigrescens*, Butl. *Upperside*: black, on the forewing a sub-apical macular fascia, a few indistinct striæ on the costa and an indistinct spot at external angle, blue-green; on the hind-wing an indistinct marginal series of blue-green spots. *Underside*: ground-colour fuscous mottled with dark fuscous, paler along costal margin and apex of forewing and at base of hind-wing, on the hind-wing a sub-marginal series of degenerate ocelli, six in number, black with white centres, the fourth and fifth the largest, the sixth very minute. Cilia on forewing fuscous, on hind-wing fuscous and white alternately, *Antennæ* reddish ochreous. Expanse 70 mm. Habitat, Kuching, Sarawak (July). ♀ Unknown. Caught in a trap baited with rotten bananas. In colouration the species approaches *E. esaca* Westw. but the shape of the wings is exactly like that in *E. panthera* Fab. Type in the Sarawak Museum. The species is named after His Highness the Rajah of Sarawak, G. C. M. G.

71. *Elymnias lais* Cram.

Papilio lais, Cramer, Pap. Exot. ii, pl. 114, f. A.B. (1779).

Occurs in the Malay Peninsula, Sumatra, Billiton, Java and Borneo, with a sub-species in the Indian region.

[For an account of the habits of this mimetic species see P.Z.S. 1902, p. 259.]

72. *Elymnias pellucida*, Fruhst.

Elymnias pellucida Fruhst. Ent. Nach. xxi (1895 No. 11 p. 1) ♀

Elymnias aroa, Shelford, P.Z.S., 1902, p. 273. ♂ & ♀

The species is most closely related to *kumara*, Moore: it has been found on Mt. Penrisen, Sarawak, and Kina Balu, N. Borneo.

Messrs. Pryer & Cator record *Elymnias annea* n. sp. from Sandakan, but give no description of it whatever! It may possibly be the same as *E. pellucida*, Fruhst.

73. *Elymnias penanga*, Westwood.

Melantis penanga, Westwood, Gen. D. Lep. p. 405 ♀ (1851).

Sub-sp. *E. penanga trepsichroides*, nom. nov.

(*Elymnias borneensis*, Grose-Smith, A.M.N.H. 1892, p. 428.)

There has been much confusion over this species—or sub-species as I prefer to call it. In 1869 Dr. Wallace described (Trans. Ent. Soc. London p. 324.) a female *Elymnias* from Borneo as *E. borneensis*. This species belongs to Moore's sub-genus *Mimadelias* and is a Pierine mimic. In 1887 Staudinger figured (Exot. Schmett. pl. 86) what he supposed to be the male of this species, but Fruhstorfer in 1899 (Berl. Ent. Zeitschr. Bd. xliv p. 57) rightly points out that this is the figure of a female, however he then states that the male of *E. borneensis*, Wall. is "ganz blau und gehört mit *Mehida*' Hew. und *Sumatrana*, Wall. zusammen in eine andere

Gruppe und zwar in das sub-genus *Bruasa*, Moore." This is quite wrong, for Grose-Smith in 1892 (l. c.) described both sexes of an *Elymnias* of the sub-genus *Bruasa* from Borneo under the name of *Elymnias borneensis*; the male is blue above and is a mimic of the Euplœine butterfly *Trepsichrois claudius*, the female resembles the females of other species of the *Bruasa* section and is not a Pierine mimic as is the female of Wallace's species. Grose-Smith's name *borneensis* being then already occupied by Wallace's species, I venture to propose the new name *trepsichroides*. To make "confusion worse confounded" Grose-Smith described as the female of his *E. borneenis*, the female of another species of *Elymnias* of the section *Bruasa*—*E. konga*—the male of which was described by him in 1899. (A.M.N.H. p. 317.) An undoubted female of *E. penanga trepsichroides* (*E. borneensis* Grose-Smith) from N. Borneo is in the Sarawak Museum collection and is now described for the first time:—Very like the female of *E. penanga*, Westwood, but the sub-apical white fascia on the upper-side of the fore-wings narrower and more outwardly oblique, the costa of the fore-wing striated with white. Underside as in the male but less rufous and darker, the sub-costal primrose-coloured spot, larger than in the male. Expanse 65 mm. Hab. N. Borneo.

74. *Elymnias abrisa*, Dist.

Elymnias abrisa, Distant A.M.N.H. 1886, p. 531.

Sub-sp. *E. abrisa konga*, Grose-Smith.

As stated above, Grose-Smith's description of the female of his *E. borneensis* is in reality the description of a female *konga*; it is very like the female of *E. abrisa*, forma typica, but has more white on the upperside of both wings.

The following is a table of the species and sub-species of the section *Bruasa* of this genus.

Elymnias penanga, Westw., forma typica. Penang, Malacca and Singapore (syn. *E. mehida*, Hew.)

„ „ sumatrana, Wall. Sumatra.
„ „ *trepsichroides*, nom. nov. Borneo.
(=*borneensis*, Grose-Smith.)
Elymnias abrisa, Dist., forma typica. Malay Peninsula.
„ „ *konga*, Grose-Smith. Borneo.

75. *Elymnias esaca*, Westw.

Melanitis esaca, Westwood. Gen. D. Lep. p. 405 (1851).
Sub-sp. *E. esaca borneensis*, Wall.

N. & S. Borneo.

Fruhstorfer has done something to clear up the confusion surrounding the species of the sub-genus *Agrusia* (Berl. Ent. Zeitschr. Bd. xliv. p. 56, 57. 1899) but 1 consider the following table to be a more correct statement of our knowledge of the relationship between the different species and sub-species :—

Elymnias esaca, Westw., forma typica. Assam.
„ „ *borneensis*, Wall. Borneo.
„ „ *godferyi*, Dist. Malay Peninsula, Sumatra.
„ „ *andersoni*. Moore. Mergui Archipelago.
„ „ *leontina*, Fruhst. Nias.
„ „ nov. sub-spec. (fide Fruhstorfer) Batu Is. (Mus. Tring.)
„ *maheswara*, Fruhst. Java.
„ *egialina*, Feld. Philippines.

E. esaca, Westw., has been wrongly recorded from Borneo. Bornean male specimens have a red patch at the base of the hind-wing below, which males of *E. esaca* have not, and I have no doubt at all but that the so-called *esaca* (male) of Borneo is nothing but the male of Wallace's species *Elymnias borneensis* (cf. *antea*). Distant has confused the female of *godferyi* with the females of

Wallace's species and so has wrongly recorded this species also from Borneo ; as pointed out by Fruhstorfer *E. esacoides*, de N., described from a male only, is probably the male of *E. godferyi*, Dist. *E. andersoni*, Moore., I regard as a sub-species of *E. esaca*. The female of *E. esaca* has not yet been described, it will prove to be a Pierine mimic.

Sub-fam. AMATHUSIINÆ.

Genus *Zeuxidia.*

Sect. i.

76. *Zeuxidia amethystus*, Butl.

Zeuxidia amethystus, Butler, P. Z. S. 1865 p. 485.

The species appears to have been recorded previously from the Malay Peninsula and Sumatra only.

[In common with nearly all the *Amathusiinae*, this species can be taken in traps baited with rotten fruit].

77. *Zeuxidia doubledaii*, Westw.

Zeuxidia doubledaii, Westwood, Gen. D. Lep. p. 329 pl. 52, f. 1 (1851).

Previously recorded from the Malay Peninsula and Penang only.

78. *Zeuxidia wallacei*, Feld.

Zeuxidia wallacei, Felder. Reise Nov. Lep. p. 461, pl. 62, f. 3.

Confined to Borneo.

Sect. ii. *Zeuxaltis.*

79. *Zeuxidia pryeri*, Butler.

Zeuxidia (*Zeuxaltis*) *pryeri*, Butler. A. M. N H. 1897, vol. 19, p. 469.

N. Borneo

Genus. *Amathuxidia.*

80. *Amathuxidia amythaon*, Doubl.

Amathusia amythaon, Doubleday, A. M. N. H. 1847, p. 175, *A. amythaon ottomana*, Butl.

The typical form occurs in the Indian region, *ottomana* in Borneo and another sub-species in the Malay Peninsula.

Genus *Amaxidia.*

81. *Amaxidia aureliana*, Honr.

Amaxidia aureliana, Honr. Berl. Ent. Zeit. 1889, p. 162.

Confined to Borneo.

This may perhaps be only a sub-species of *A. aurelius* Cr., from the Malay Peninsula and Sumatra.

Genus *Amathusia.*

Sect. i.

82. *Amathusia phidippus*, Joh.

Papilio phidippus, Johanssen. Amoen. Acad. vi. p. 402 (1764).

Borneo, Java, Sumatra with sub-species in the Malay Peninsula, Burma, Tenasserim, Nias, Mentawei, Celebes, Torres Straits (?)

83. *Amathusia schönbergi*, Honr.

Amathusia schönbergi, Honrath. Berl. Ent. Zeitschr. p. 347 T. vi. f. 1 (1887).

Sub-sp. *A. schonbergi borneensis*, Fruhst.

Banjermassin. The typical form occurs in Pegu, Tenasserim and the Malay Peninsula.

Sect. ii. *Pseudamathusia.*

84. *Amathusia ochreofusca*, Honr.

Pseudamathusia ochreofusca, Honr. Iris. 1886, p. 348.

Malay Peninsula, Borneo, Sumatra.

Genus *Thaumantis.*

Sect. i.

85. *Thaumantis odana*, Godt.

Morpho odana, Godart, Enc. Meth. ix. p. 445, (1823).

Malay Peninsula, Nias and the Greater Sunda Is.

Sect. ii, *Kringana.*

86. *Thaumantis noureddin*, Westw.

Thaumantis noureddin, Westwood, Gen. D. Lep. p. 337, (1851).

Malay Peninsula and Borneo.

87. *Thaumantis lucipor*, Westw.

Thaumantis lucipor, Westwood, Gen. D. Lep. p. 337, (1851).

Malay Peninsula and Borneo.

Sect. iii, *Thauria.*

88. *Thaumantis aliris*, Westw.

Thaumantis aliris, Westwood, Trans. Ent. Soc, 1856, p. 176, pl. 17.

Confined to Borneo.

Genus *Discophora.*

89. *Discophora necho*, Feld.

Discophora necho, Felder, Reise Nov., Lep. iii, p. 462, (1867).

Sub-sp. *D. necho cheops*, Feld.

The typical form occurs in Java, *cheops* in Borneo. other sub-species in Sumatra, Nias, Palawan and the Philippines.

90. *Discophora tullia*, Cr.

Papilio tullia, Cramer, Pap. Exot. i, pl. 81, figs. A. B., (1775).

Sub-sp. *D. tullia sondaica*, Boisd.

The typical form occurs in Hongkong, *sondaica* in Java, Sumatra and Borneo, other sub-species in India, Tenasserim, Malay Peninsula and the Philippines.

91. *Discophora amethystina*, Stich.

Discophora amethystina, Stichel, Berl. Ent. Zeitschr. xlvi. S. B .p. 4, (1901).

Borneo. I am not acquainted with this recently described species.

Messrs. Pryer and Cator also record *Discophora celinde*, Stoll. and *Discophora ogina*, Hübn, from Borneo, but without having actually taken specimens of these species, so that the records must be regarded as extremely doubtful.

Genus *Enispe.*

92. *Enispe milvus*, Staud.

Enispe milvus, Staudinger, Iris vol. ix, p. 231, pl. v. f. 4, (1896).

Mount Kina Balu.

Marshall and de Niceville in Butterflies of India, vol. i, p. 312, record *Stichophthalma nourmahal*, Westw. from India, Sikkim and Borneo ; the latter locality is evidently erroneous and I can find no confirmation of it in any other publications on Oriental butterflies.

Genus *Clerome.*

93. *Clerome phaon*, Erichs.

Papilio phaon, Erichson, N. A. Acad. N.C. p. 401, pl. 50, figs 1, 1a (1834).

Philippines and Borneo.

Westwood (Trans. Ent. Soc., London, 1856, p. 186), gives Borneo as one of the localities of this species, the locality has up to the present never been confirmed ; there are however several undoubted specimens of this species in the Sarawak Museum collection from Limbang and Trusan, N. Sarawak. As before mentioned there is an infiltration of Philippine forms to be discerned in the N. Borneo fauna.

94. *Clerome gracilis*, Butl.

Clerome gracilis, Butler A.M.N.H., 1867, p. 401, pl. 8, f. 7.

Malacca, Singapore, Borneo, Sumatra.

I cannot agree with Fruhstorfer in regarding this as a sub-species of *phaon*.

95. *Clerome stomphax*, Westw.

Clerome stomphax, Westwood, Trans. Ent. Soc., 1856, p. 186, pl. 21, figs. 3, 4.

Borneo.

96. *Clerome besa*, Hew.

Clerome besa, Hewitson, Exot. Butt. iii, *Cl.* pl. 1, fig. 1, (1863).

Fruhstorfer considers this to be merely an aberration of the preceding species.

Borneo.

97. *Clerome arcesilaus*, Fab.

Papilio arcesilaus, Fabricius, Mant. Ins. ii. p. 28, (1787).

Indian region, Siam, Malay Peninsula, the Greater Sunda Is. and Bali.

98. *Clerome kirata*, de Nicév.

Clerome kirata, de Nicéville, Journ. Bombay Nat. Hist. Soc. 1891, p. 344, Pl. F. fig. 3.

Malay Peninsula, Borneo (Kina Balu), Sumatra.

Genus *Tenaris*.

99. *Tenaris occulta*, Grose-Smith.

Tenaris occulta, Grose-Smith, A.M.N.H. 1889. p. 316, Borneo.

Genus *Xanthotænia.*

100. *Xanthotænia busiris*, Westw.

Xanthotænia busiris, Westwood, Trans. Ent. Soc. London, 1856, p. 187.

Tenasserim, Malay Peninsula, the Greater Sunda Is., and Nias.

Genus *Amnosia*,

101. *Amnosia baluana*, Fruhst.

Amnosia baluana, Fruhstorfer, Ent. Nachr. xx, No. 19, p. i, (1894).

N. and S. Borneo.

Herr Fruhstorfer informs me that in his collection is a female of this species from S. Borneo which differs somewhat from the type female from Kina Balu ; I have only seen specimens from Mt. Matang near Kuching and these do not appear to differ in any way from the published description of the Kina Balu form: Herr Fruhstorfer's S. Borneo specimen is evidently from the low-country.

The position of this genus is very doubtful. I follow Fruhstorfer in placing it amongst the *Amathusiinæ* ; de Nicéville suggested that it should come at the end of the *Satyrinæ*, whilst Felder and Schatz-Röber placed it amongst the *Nymphalinæ*, probably its correct position.

The Sakais of Batang Padang, Perak.

By G. B. Cerruti.

The word Sakai is the Malay name for the aborigines who inhabit the forest on the high slopes of the lower half of the main ridge and some subsidiary ridges of mountains of the Malay Peninsula. As the Malays were the first to come into intercourse with these aborigines, the influence of the Malay, as well as the fear of them, is strong upon them. Malay history in Perak reaches with certainty no farther back than the 16th century, and Malays have no written records relating to the Sakais, whom they treated as slaves and less than human beings.

The Sakais themselves have neither written records nor signs to represent language, whatever information regarding their origin is supplied by them rests solely in tradition.

The narrative of events, which is extracted from them with difficulty, very seldom passes beyond the time of a grandfather, and may be regarded as inexact if not incoherent.

We shall, therefore, have to look for knowledge of their origin to the results of a morphological study of the race.

Physical Characters.

The average height of the male Sakai may be taken approximately at 5 ft. 3 in: and that of the female at 4 ft. 11 in: These figures are for the present only tentative. The colour various from a light to a chocolate-brown, the eyes are slightly almond shaped, the nose is flat, the forehead straight, the lips full and separate, but not negro like, the teeth regular and well-formed though blackened by sireh, the hair copious, black, somewhat wavy. occasionally crisp, but never woolly. The senses are unusually keen and well developed. In his native jungle he sees better, hears better, and apparently uses his sense of smell better than other races. His touch is delicate and sensitive, as is that of most savage races, and his sense of taste is his criterion to judge of the good or ill effects of many objects.

The body and limbs are generally speaking well formed. Cripples and deformed children are extremely rare amongst the Sakais, nor are abnormalities of anatomical structure frequent amongst them.

MENTAL AND MORAL CHARACTERS.

A desire for what may be called independence, but what in reality is a dislike of restraint is remarkable in this race. Work for a Sakai must be voluntary; the moment that it becomes compulsory it becomes distasteful.

Not less notable is his distrust of strangers. The approach of a white man will often scatter a whole habitation of Sakais; and even the presence of natives of other races, such as Malays, Tamils or Chinese, is a frequent cause of their speedy removal from an accustomed haunt. Once the Sakai confidence is secured, he is like a child, and must be treated as such. All obligations entered into with him must be scrupulously observed, for, like the natural child, he is not prone to deceit or falsehood. He is also possessed of the child's simple idea of morality, as expressed in his words and acts. Early marriage being the custom, the immorality of civilized races, with its literature and influence on social relations, is unknown.

DRESS.

Bark beaten finely and elongated until it resembles coarse ramie fibre, is the material from which the primitive clothing is made. Both sexes fasten strings of this bark, about six inches or more wide, around the waist, by tying them in back and in front. A thin fillet of the same stuff, dyed and coloured in a simple pattern, is used to tie the hair, which is generally filled by the women with combs, made of bamboo and ornamented in various styles.

Flowers are universally worn by the women in the hair, around their necks as necklaces, and occasionally in their waist-belts of odorous grass. In both sexes the nasal septum is perforated for the insertion of straight pieces of bamboo, and the ear only by the women for the insertion of some bamboo with some odorous grass, of shell, and of animal teeth, to serve as ornaments.

ORNAMENTS.

The use of necklaces belongs to attire. Ornamentation of the body is effected by painting the skin in different colours, mostly red, yellow and black, by dyes obtained from plants, gutta and lime. Two lines, one drawn from the vertex of the head over tip of nose to chin, and the other from ear to ear, bisecting the first, divide the face into four areas, the painting of two of which on one side must correspond to the painting of the two others of the opposite side.

The chest and body are generally divided also by a vertical line cleaving the trunk in two halves, right and left, upon which similar patterns are painted.

The object of this adornment by painting is not merely decoration, it is what formerly would have been called dedicated to superstitious uses. The painting of the face and body is, in fact, a species of charm and is supposed to act as amulets and talismans are presumed to act, by warding off dangers, driving afar evil spirits, and filling the wearers with unusual courage.

RELIGIOUS SENTIMENT.

It is a peculiarity of the Sakai that, like many of his characteristics, his religious belief is extremely simple. The idea of a Creator, of an all-powerful, all-just and all-merciful Ruler, is absent from his scanty mythology. The origin of the world and the life of mankind on the earth present no problems to him. He believes simply in good and evil spirits. The good spirits are to him vague, indefinite beings, who manifest themselves rarely fatally, and about whom, therefore, he knows and believes little. The evil spirits, on the contrary, are feared, because they are considered to dwell in dangerous ravines, in abandoned *kampongs*, in caverns, and in places regarded according to popular Sakai report as uncanny, whence they issue to infect the Sakais with famine and disease. They also are believed to make themselves felt in thunder, in lightning, and most particularly of all in wind. The early morning breeze which blows on the tropical hills after 2 a.m. is for the Sakai the work of bad spirits. It is the hour when he feels the fall of temperature most, and it is for him a fatal hour. Accordingly, all true Sakais are awake at this time to chat and smoke and wait until the biting blast passes away. Tattooing is little known amongst them; and though they have a certain knowledge of the ways of tigers and snakes, these are neither worshipped nor considered to be directly concerned with evil spirits.

SOCIAL RELATIONS.

The most important circumstance of a man's, and of woman's life, marriage, does not loom large in the Sakai's mind. For him it is neither a religious ceremony nor a civil contract, it is merely a mode of sexual union founded upon mutual sympathy. Rites in connection with it have so far not been proved to be practised. There is neither capture, nor purchase, nor selection. The elders, moreover, do not appear to interfere in the choice of their sons and daughters.

It is probable that it is owing to this fact that these aborigines are gradually decreasing in numbers, even though consanguinity in matrimonial relationship is forbidden, about the only prohibition of any kind that the Sakais know, and to which they submit.

Polygamy exists, but it is rare. Divorce also exists, and is common. The marriage tie, being as loose as is described, is unable to consolidate a union; the slightest incompatibility of temper, temporary sterility of the wife, lasting about three durian seasons, or an attack of dangerous disease, is a sufficient cause for a divorce, which is accomplished without resentment or apparent jealousy on either side. Deformed persons which are very rare amongst the Sakais, or those attacked by dangerous disease, must make a vow of celibacy. The women give birth to their children with only old women attendants, but in a place prepared by the husband. The child is not allowed to touch the earth, either from a superstition that the child would be injured by contact with the earth, or that the child would soil the ground, but is laid upon a couch of dry leaves, which cover a rudely made clay embankment. Directly after birth only old women and young children who are not able and strong enough to enter the jungle to find their daily food are permitted to approach the child. All others are excluded for a certain period, as there is a certain superstition among them that able bodied persons approaching a newly born baby will contract its smell and take it to the jungle with them when out looking for food. The evil spirits, it is said, are always on the look-out for persons with this smell, and will follow them on their return to their huts to the birth place of the child. At the end of that time the child receives what may be called a ceremonial purification of water, and is presented to him at the village.

HABITS.

The Sakais are essentially nomadic, and clear only very limited areas in the hill forests for cultivation ; of rice culture they know little, for corn or maize and the Sikoi, sweet potatoes, and tapioca, are their principal crops. The most primitive of the Sakais still subsist by the chase, using the Sumpitan, or blow-gun, and poisoned darts to kill wild animals and birds. As is well-known, the darts are poisoned by being dipped in a gummy or glutinous extract of Ipoh which hardens on the tips, and of another and more dangerous poison extracted from the roots of a kind of creeper named by the Sakais *Legop.*

The Sakai dies as he lives, surrounded by powers of nature which he understands not. If a disease be regarded as contagious, a noise is made on rude drums made of big bamboo to drive away the evil spirits. It is remarkable that there are not musical instruments to express grief ; but in expression of joy a flute played through the nose, and a kind of mandoline made also of bamboo, are performed upon particularly by women. After death comes burial in a deep grave, the body generally standing erect in the grave about 4 feet deep or in a sitting posture with tobacco, betel-nut, potatoes, fruits and also with his blow-pipe and poisoned darts by his side. The grave is closed by felling some jungle surrounding it and for about a week they bring the usual food, if a female also some flowers, and afterwards abandon the neighbourhood ; for a dead person frequently drives the timid Sakais miles awayfrom promising slopes on which they were beginning to grow their necessary food.

On Some Hymenoptera From the Raffles Museum, Singapore.

BY P. CAMERON.

Dr. Hanitsch having sent me to be named some undetermined Hymenoptera from Singapore, I give a list of them as a small contribution towards the knowledge of the Hymenopterous Fauna of the Island.

Evania appendigaster Lin. A cosmopolitan parasite in the egg-cases of Cockroaches.

Stilbum splendidum, Fab.

Macromeris violocea, Lep.

Discolia decorata, Burm.

This species (which = *D. flavopicta* Lm.) is in the collection of the Raffles Museum from the Dindings.

I think it very probable that *D. ergenna*, Com. (Journ. St. Br. Royal Asiat. Soc., 1902, p. 82) is its male.

This species is recorded by Magretti (Ann. ch. Museo Civico di Storia Nat. di Genova (2) xii, 243) from Schwegoo, Burma; but it is not included by Bingham in the Fauna of British India, Hymen. It has been reported from Java and Sumatra.

Salins flavus, Fab.

Sceliphron violaceum, Fab.

Irypoxylon petiolàtum, Sm. Found in the Museum Workshop.

Piagetia ruficollis, sp. nov.

Black the scape of the antenæ, the greater part of the clypeus, the prothorax, the mesonotum in front of the tegulæ, the tegulæ, the abdominal petiole, except at the base, and the legs, red; the 4 front coxæ above, the hinder entirely, the basal point of the 4 front, trochanters, of the hinder above, a line on the fore femora behind, the apical two thirds of the hinder above, the greater part of the hinder tibial and the base of the hinder coxæ, black. Wings hyaline, the basal half of the radial cellule, the apex of the 1st cubital cellule, the greater part of the 2nd and 3rd and the discoidal along the recurrent nervure smoky; the nervures and stigma black. Head and thorax covered with silvery pubescence ♀

Length nearly 10 mm.

Hab. Singapore, June.

Clypeus indistinctly keeled down the centre; there is a semi-circular depression in the middle at the apex, which has a distinct margin and has a slight incision. Base of mandibles broadly yellowish testaceous. The base of the hinder femora is slightly thickened below, the apex of the thickened part ending in an indistinct tooth.

Comes nearest to *P. rufivenis*, Cam. which may be known from it by the antennæ being almost entirely red, and the sides and apex of the median segment are also red.

Rhynchium hæmorrhoidale, Fab.

Vespa cincta, Fab.

Icaria Singapurensis, sp. nov

Brownish-black, the head below the antennæ, except for a narrow black line down the centre, a mark, twice longer than wide and dilated above, a mark twice longer than broad, transverse above, narrowed and rounded below, on the front the eye incision and the lower inner orbits broadly, the upper orbits narrowly, the line dilated above to the hinder ocelli, the outer orbits entirely below, the inner half of the upper part, the mandibles, except the teeth, a line on the pronotum, the base and the lower half of the propleuræ, the meso and metapleuræ, except for an oblique black line on the former and extending from the lower furrow downwards and with a short line on either side of its top, 2 lines on the mesonotum, the base of the scutellum, the post-scutellum, 2 large lines on the centre of the metanotum, the sides of the petiole to near the apex, 2 round marks on the centre of the post-petiole, the extreme base of the 2nd segment, its sides to shortly beyond the middle broadly, the mark at the apex diverging towards the middle of the segment, 2 large marks on the basal half of the 3rd, the marks broader than long and rounded on the inner side, the 2nd segment below, except along the sides and apex, the latter with the sides broadly and roundly dilated and the centre transverse, the base of the 3rd segment, the line narrowed and transverse in the middle and lines on the sides of the apical segments, yellow, legs black, all the coxæ, the lower side and the apical half of the femora above, the underside of the tibiæ and their apex above, yellow; the apical joint of the fore tarsi of a more obscure yellow. Wings hyaline, with a violaceous-tinge, the nervures and stigma black.

Length 14 mm. ♀

Hab. Singapore.

Scape of antennæ below yellow, the flagellum beneath and its apex above, rufous. There is an indistinct keel on the lower part between the antennæ. The black on the front is tinged with rufous. Thorax smooth, the scutellum closely, minutely punctured, its apical half furrowed in the centre. The petiole is longish as long as the 2nd and 3rd segments laterally together; the dilated apex is somewhat twice longer than wide. Head broader than the thorax.

Comes near to I. *4-maculata*, Cam. The present species is more slenderly built and with a more slender petiole in particular being more slender and not dilated in the middle.

Icaria rufinoda, sp. nov.

Deep black, densely covered with white pubescence, the apex of the clypeus and the base of the mandibles pallid yellow, the petiole ferruginous; the wings hyaline, the whole of the radial cellule and the greater part of the apex from the 2nd transverse cubital nervure smoky, with a violaceous tinge, the nervures and stigma dark fuscous. ♀

Length 12 mm.

Hab. Singapore, June.

Front and vertex alutaceous, the face and clypeus densely covered with a white pile. Thorax alutaceous, covered with a white pile. Metanotal furrow deep, the sides oblique, the bottom with a narrow smooth impression ; it is not striated. Scutellum and post-scutellum coarsely alutaceous, almost rugose ; the apical slope of the post-scutellum smooth and shining. Abdominal petiole nearly as long as the 2nd segment, the basal third narrowed; the basal half of the dilated part obliquely narrowed towards the base, the 2nd segment bell-shaped, its length slightly greater than its width at the apex, which has a distinct crenulated furrow, the apical segments with a silky pubescence. Legs primrose, the spurs black.

Comes close to I. *lugubris* Sm. which may be known from it by the black abdominal petiole.

Nomia iridescens, Sm.

Crocisa emarginata, Lep.

Anthophora zonata, Lin.

Malay Hymenoptera Addenda and Corrections

In my paper (J. S. B. R. A. No. 39, 1903) I have omitted to state that Mr. Shelford reared *Spinaria curvispina* Cam. from the larva of a species of *Thosea*, a moth of the Family *limacodidæ* and *Dedanima longicornis* Cam. from a species of *Chærocampa.*

I take this oppertunity of adding the descriptions of two new Malay species of *Bracon.*

Bracon teius sp. nov.

Black ; the head pallid yellow ; the pro. and mesothorax and the sides of the median segment on the basal half, ferruginous ; the 4 front legs ferruginous, the middle tarsi fuscous, the hinder legs black, thickly covered with black hair, the calcaria dark testaceous. Wings dark fuscous, violaceous, with an indistinct hyaline, oblique cloud in the 1st cubital cellule. ♀

Length 16; terebra 20 mm.

Hab. Ternate.

Face rugose, covered with long pale hair. Apex of 1st abdominal segment closely, distinctly longitudinally striated; the plate on 2nd segment clearly longer than its greatest width irregularly striated in the centre, its keel reaching to the base of the apical third of the segment; from its outer side a keel runs obliquely to the apex; the part between the keels bears curved, oblique, clearly separated striæ; the securiform articulation and the furrow on the next segment striated; in the centre the striæ are continued on to the centre of the segment, The 2nd and 3rd abscissæ of the radius together are about equal in length to the 1st. The abdomen is narrow not dilated in the middle and is clearly longer than the head and thorax united.

Bracon spilogaster, sp. nov.

Black, the head pallid yellow, the thorax and 4 front legs ferruginous; the wings fuscous, the stigma and nervures black. ♀

Length 9 mm.; terebra 4 mm.

Head smooth and shining; the face and vertex covered with fuscous pubescence. Thorax smooth and shining; the metanotum has 2 blackish marks on the apex. Abdomen as long as the head and thorax united; black, the basal 4 ventral segments pale, with 2 large black marks in the centre; broad in the middle, narrowed at the base and apex; smooth and shining; the securiform articulation stoutly striated; the keel on the 2nd segment is longer than broad, is broad at the base, becoming gradually narrowed towards the apex, which is prolonged into a short keel with a depression on either side, but not reaching to the apex of the segment; the furrows on the 3rd and 4th segments are narrow, curved and smooth.

The tibiæ and tarsi are thickly covered with a pubescence and, more sparsely, with pale hair; the hinder calcaria fuscous; the 2nd cubital cellule in front is about one-third longer than the 3rd. Mandibles pale yellow, the teeth black.

P. Cameron.

ERRATA.

In my paper in the "Journal" for 1902, No. 37 occur the following printer's errors.

Page 30, 13th line from bottom for "covered" read "curved"
„ 31 & 32 for "Megiselens" read "Megischus."
„ 33, 10th line from top for "sharpened" read "shagreened"
„ 34, 1st „ „ for "smoothy" read "smoky."
„ 37, 17th „ „ for "Brule" read "Brulle."
„ 39, 5th „ „ for "expressed" read "depressed"
„ 39, 16th „ „ for „ read „
„ 44, 7th „ „ for *acvenitini* read "*acoenitini.*"
„ 44, 10th „ „ for *acvenites* read *acoenites.*
„ 47, 11th „ „ for Fah. read Fab.
„ 50, 3rd line from bottom add after "smooth" *peronatum.*
„ 50, add after "reticulated" in last line *fuscicorne.*
„ 51, above *anisobas cincticornis* add *Ichneumonini.*
„ 52 „ *Bodargus* add *Joppini.*
„ 53 „ *Diapetus* add *Cryptini.*
„ 62 2nd line from bottom for "slope" read "shape"
„ 71 14th „ top *Joppini* should be placed above *Zonojoppa.*
„ 73, 5th „ bottom for "are" read "areæ."
„ 81, top line for "metapleurg" read "metapleuræ."
„ 91, 9th line from top for "sharpened" read "shagreened"
„ 114, 12th „ bottom for "tubæ" read "tibiæ"
„ 125, 2nd „ „ for "tech" read "teeth"
„ 138, 3rd „ „ for "covered" read "curved"

P. Cameron.

Correction to Journal No. 39.

Page 54 after line 18 insert.

"Follow the principal noun with which they are connected; and the object."

Short Notes.

On the Flowering of Barringtonia racemosa.

The Barringtonias are trees of moderate size, belonging to the order *Myrtaceæ* and usually to be met with along tidal rivers, or more rarely in the hill woods. The flowers are produced in long hanging racemes, or in some species in short erect spikes. In *B. racemosa* the pendulous spikes are about 2½ feet long and bear about 30 flowers. They are sessile with a short ⅛ inch ovary with 2 or 3 rounded green sepals and four lanculate white petals, an inch long. The stamens are innumerable, with slender filaments an inch long and minute yellow anthers, the style is nearly as long slender with a minute capitate stigma and all deep crimson.

The peculiarity of its flowering consists in the fact that it is nocturnal. The flowers open about 4 or 5 to 16 on each spike at a time, the buds commence to split about mid-day, and remain partially open till nightfall, fully expanding at about half-past seven or eight. At that time the petals are spread out widely, and the stamens radiate in all directions, so that the flowers have a brush-like appearance.

Before daylight the petals and stamens have fallen in a mass, leaving only the calyx and the stiffly projecting style.

They exhale a rather coarse scent somewhat resembling that of meadow-sweet, and from a tree with about 20 flowers open at once I could perceive the scent distinctly at 25 paces off. The honey, abundant at night, is contained in a nectary formed by the connate bases of the stamens. The flowers are visited by moths, I caught a common grey Noctuid, and a rather curious looking light red brown *noctua* with plicate wings.

Moths were not very abundant at the flamers, when I observed them, but perhaps this was due to the strong moonlight.

The smaller brown moth plunged into the flower among the stamens so as to reach the honey.

I have little doubt that a large tree of the genus *Careya* (apparently undescribed) in which the flowers were of similar shape but borne in an erect short spike, is fertilized in the same way, as though in full flower no open flowers were procurable during the day time, but the whorls of stamens were found covering the ground in the mornings. In this lofty tree in the Botanic gardens jungle the stamens were white but the base of the filaments crimson.

The Myrtaceæ as a rule seem to be day flowering plants. The Eugenias, our biggest genus, have usually white flowers often produced in large corymbs. *Eujenia lineata* and similar species are haunted, when in flower, by abundance of bees. *Apis dorsata* and *A. florea*, *Trigona collina* and other species and the pollen-eating flies (*Syrphidæ*) and also by many butterflies.

E. Ridleyi peculiar from the flowers being light apple green in colour is visited by flies (*Muscidæ*).

Rhodamnia trivervia with small white sweet scented flowers produced in great abundance and lasting but a day each, is visited by bees, *Apis*, and *Trigona*, and by the *Syrphidæ*.

H. N. Ridley.

Fertilization of Webera Stellulata.

Webera Stellulata Hook. fil. is a small shrub 2 or 3 feet tall belonging to the order *Rubiaceæ*. It has smooth dark green shining leaves elliptic cuspidate, and a short dense corymb of light green flowers. The buds are peculiar in shape, being fusiform and narrowed towards the tip, the joints of the petals instead of being pressed together at the top into a point as in the other species of *Webera* are turned out to one side bent at an angle pointing from left to right. They are green and covered with white hairs and at the base they are connate into a short tube, in the mouth of which are long white hairs. The stamens five in number have short green filaments and long linear anthers, which split and shed their pollen before the flower opens. The style is long and cylindrical and covered entirely with white hairs. When the fully developed bud is touched on the tip, the petals suddenly spring open and lie quite flat in the form of a star. At the same time the pollen lying loose in the bud is thrown upon the other flowers already open. The mechanism by which this sudden expansion of the flower takes place seems to be very simple. The upper part of the petals are twisted in bud, and on the side opposite to the direction in which the bent tip points a portion of the edge is incurved so as to be tightly held by the next petal to it. A light pressure, as of an insect, on the horizontal tips of the petals by bending them down causes the petals to separate and fly back suddenly, jerking the pollen out over the other flowers, or possibly on the insect visitor. On the top of the ovary is a brown sticky ring which may perhaps secrete honey but I cannot detect any in the tube. The flowers possessed a faint scent, and may be fertilised by insects, but considering the inconspicuousness of the green flowers, as compared with the sweet-scented white blossoms of the other Weberas and the fact that it is quite easy for the pollen of one flower to be thrown by the mere opening of the flower on to the stigma of the adjacent one, it is more than probable that the plant itself fertilises one flower by the pollen of another.

Webera stellulata inhabits forests, usually in rather dry spots. I have found it in Singapore at Woodlands flowering in June, and Bukit Mandai, also in Johore, at Panchur; Selangor, Kuala Lumpor; Negri Sembilan, Gunong Angsi.

The Malays call it Kahwa hutan and Kuruseh putih and Pokoh Subiroh. It flowers from December to June.

H. N. Ridley.

Human Images among the Orang Mantong.

I have long suspected the existence of Berhala, or human images, among the "wild tribes" of the Rhio archipelago, but never actually met with any until the past summer (1903).

When at Pulo Sanglar or Lake Durian, Rhio archipelago, in July. I found two wooden images representing women, in a cave near the sea shore, not far from Kampong Telok Lanun.

Each image is about 3½ feet high. One of harder wood was much more carefully carved than the other. It had 3 wooden horns about 6 inches long projecting upwards from the head. These horns were serrated on one edge. This figure also had straight rudely carved arms of soft wood, much decayed.

The teeth were represented by pieces of broken shell. A blackish line extended diagonally across the chest, meeting a horizontal line extending across just above the position of the nipple. A blackish spot was over the position of the heart.

The other figure was very rudely carved of soft white wood and was without arms.

The figures were lying face downward on the floor of the cave and had evidently not been disturbed for months, as roots were growing over them and the wood was beginning to decay.

Pulo Sanglar is inhabited by Orang Mantong, and latterly many Chinese have settled there cultivating gambier.

The Batin of Telok Lamun called himself a *Malay*, but he was more than half Orang Laut.

No true Malays live on Sanglar, but they inhabit the neighbouring small islands. These Malays call all the Sanglar people *Tambus*, except of course the Chinamen, and say there is not a Mussulman. All the Sanglar people eat pig. They are certainly not true *Tambus*. They were very shy, and I had a lot of trouble inducing them to be photographed.

No information in regard to the use of the images could be obtained. Every one denied the existence of such things, not knowing I had already found them.

The images cannot be regarded as true *berhala* or idols. Most probably they are a sort of "*Sakkat buang*" for use in sickness. Among the Orang Laut when a man is ill, a wooden figure of a bird, snake, fish or other animal is made, and the *pawang* or *bomo* exorcises the hantu or devil in the sick man and drives it into the figure, which is then carried out to sea and thrown overboard. Last year we picked up a wooden bird floating in Durian Strait.

Very likely the human figures were used in the same way, being carried out into the jungle instead of out to sea. Like the Rumah hantu to be seen in the woods near Malay Kampongs. These images resemble the adu adu of Pulo Nias.

Dr. Abbott.

The Orang Laut of Singapore

In Journal 33, p. 247, Mr. Skeat and I published some notes on the Orang Laut of Singapore, a race very nearly extinct, and of which very little is known, I have since come across an account of them in Finlayson's Mission to Siam and Cochin China, in 1821. The author somewhat naturally mistook them for Malays and thus describes them. " The condition of the lower class of Malays in these parts is wretched beyond what we should conceive to be the lot of humanity in an intertropical climate, almost the whole of their life is spent upon the water in a wretched little canoe in which they can scarce stretch themselves for repose. A man and his wife and one or two children are usually to be found in these miserable sampans; for subsistence they depend on their success in fishing. Their tackling is so rude and scanty that they are often reduced to the most urgent want, when they have made a meal they lay basking in the sun or repose under the dense shade of the mangrove till hunger again calls them into action. They have scarce a rag of cloth to secure them from the scorching noonday sun or shelter them from the damp and noisome dews and exhalations of night. The women are not less dexterous than the men in managing their boats. Their only furniture consists of one or two cooking pots, an earthen jar and a mat made of the leaves of the Pandanus which serves to protect them from the rain. In the numerous bays inlets and creeks that surround Singapore an inconceivable number of families live in this wretched manner who have never possessed a house nor any sort of abode on the land. They are constantly roving about from place to place in pursuit of fish. What they have succeeded in taking more than is required for their immediate use, they dispose of to the fixed inhabitants, taking rice, sago, betel and cloth in return. This description of Malays goes by the appellation of Orang Laut or men who live on the sea.

A number of the people called Orang Laut were brought to us for inspection. They were superior in condition, in appearance more civilized than many whom we had seen in the bays and creeks remote from the haunts of men. A portrait was taken of one of them illustrative of the physiognomy and general appearance of the Malay race, six of these men were more minutely examined. Their average height was five feet three inches, average weight nine stone eight pounds, average circumference of the chest two feet ten inches, circumference of the clenched fist about eleven inches, average of facial angle 66½, average temperature under the tongue 100·02."

H. N. Ridley.

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STRAITS BRANCH
ROYAL ASIATIC SOCIETY

[No. 42]

JOURNAL

January, 1905

230986

Agents of the Society

London: Kegan Paul, Trench, Trübner & Co.

PRINTED AT THE AMERICAN MISSION PRESS SINGAPORE.

[No. 42.]

JOURNAL

of the

Straits Branch

of the

Royal Asiatic Society

FEBRUARY 1905

SINGAPORE :
PRINTED AT THE AMERICAN MISSION PRESS
1905

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Various methods of computing the time for planting among the races of Borneo.

BY DR. CHARLES HOSE.

Agriculture, even if rude, is at once a token and a cause of primitive culture. The native of Borneo has no special reason to pay attention to the phenomena among which he lives, unless he is a farmer. He may, like the Punan, know the lie of the land for miles around, and be able to judge the slightest indications of the jungle, but that is hardly knowledge which leads to civilization. The farmer, on the other hand, has to study the course of the seasons, the nature of the soil and the variability of animals and plants.

There are certain special problems which have presented themselves to the uncultured farmer in Borneo, which would not cause the least difficulty to an European in a temperate climate. In the tropics as everywhere else, agriculture is performed with the yearly regularity which is so familiar that to us it seems in no way remarkable. Near the equator, of course, seasons have not as a rule the same striking character that they have in higher latitudes. In Borneo from October to April the wind is usually from the north-east, and brings rain, more to some districts than to others, while during the rest of the year the monsoon is reversed, but there is little else to distinguish one month's weather from another. It is almost impossible to tell the time of year from temperature or moisture, and quite impossible to do so with any accuracy.

The farmers have found, nevertheless, that certain seasons are more favourable than others to their operations. It is not so much the crop which requires to be sown and reaped at particular times, as the ground, whose preparation is difficult in wet weather. Rice will grow and ripen in a sufficiently warm, sunny climate provided there is enough water on the land, either from irrigation or continual showers.

In Borneo there is usually rain all round the year in magnificent quantity. It is not according to the rainiest season, but according to the driest that the farmer regulates his work. For the jungle is felled and left to dry before being burnt, and the success of the crop depends largely on the completeness of the clearing. The best crop will be generally obtained on land burnt off at the driest season.

How are these illiterate tribes to find out when a particular season has arrived? In England this is simple enough ; we have almanacks galore, we have clocks which can tell us the length of time from sunrise to sunset. The native does not know how many days there are in a year, and would not take the trouble to keep count if he did. He may know how many moons there are, but like the Malays he would probably get about eleven days wrong every year, and eleven days is a large error of itself. In two or three years the crops would be planted far too early. Unfortunately, too, the length of the day varies very little in the tropics, and the native has no means of observing that variation. He is therefore obliged to have recourse to the stars or the sun to tell the time of year.

The Dayaks and many of the less important tribes look to the stars to guide them. Every day, as they know, these bodies rise a little earlier, and some wise man is appointed to go out before dawn to watch for the Pleiades. Dayaks use the Malay expressions "*bintang tiga*" for Orion's belt, and "*bintang banyak*" or *Apai andau* (the father of the day) for the Pleiades. When the "seven stars" rise while it is yet dark, it is time to begin.

Two of the house are sent into the jungle to find omens, while the others wait. In two days perhaps, or a fortnight, or at most a month, the favourable indications will appear, and then an end is made both of science and superstition and the Dayaks set to work on the forest. If they are so late that Orion's belt rises before daybreak, they must make every effort to regain lost time or the crop will be poor. What kind of land they will choose depends on circumstances : in any case it will have lain two or three years fallow and will be thickly covered with vegetation.

The virgin forest, though less easy to fell, has this advantage over previously cleared ground, that no grass is growing on the land and much trouble in weeding is avoided. But the men do the felling, the women most of the weeding, and whether a choice is made of forest or scrub will depend largely on the courtesy and consideration shown by the men for their wives and daughters. If the forest is chosen, the men, sometimes helped by their womenfolk, cut down the undergrowth and small trees with their parangs, and then begin to attack the great trunks from slight platforms well above the ground, which enable them to avoid buttresses and roots. The felling is usually accomplished in this manner. The ground being as a rule the sloping side of a hill, each tree is cut through from one side nearly to the core, and on the opposite side an equal distance a little lower down the trunk. The lower cut is made on the side facing down hill. By dint of much labour, in which the various members of a village generally come to help their comrades, a whole hill side of trees is cut through till a slight blow will hurl them to the ground. Two heavy trunks at the summit are then felled, and made to fall on the neighbouring trees. These fall in their turn, and carry with them those below, till with a loud roar and a mighty rush of wind a V shaped space is cleared on the slope below. Like a pack of cards the forest monsters are laid low, to the intense excitement and delight of the howling spectators.

Then again the Dayaks await the permission of the stars for the next operation. Only when the Pleiades are at the zenith before dawn do they think if advisable to burn and sow. By this time, unless the weather has been wet, an unlikely circumstance at the season of year, the boughs are dry as match wood and the leaves are dead, though still on the twigs. Some hot day, towards noon, when a breeze is blowing, they take down special charms to secure wind, and also endeavour to attract the Æolian spirits by keeping up a loud whirr. The mass of dead wood is then set on fire. The flames rise to the skies and fill the country with smoke, while the added heat of the fire is almost insupportable. Insects with singed wings buzz around, and the hawks dive into the smoke to find their prey. The spectacle is grand indeed. Sometimes wet weather keeps the wood damp until the leaves fall from the twigs, and then the land is often left untilled, for it is nearly useless. When the fire has passed over the fallen timber, deep layer of ashes and charred trunks is all that is left. The partially burnt wood is heaped round a stump and again ignited, till little save ashes, occasional stumps, and islands of green trees left to preserve valuable fruit, are to be seen in the clearing. The rice is then dropped by the women, a few grains at a time, into holes made by the men with pointed sticks; perhaps cucumber, maize and other sundry plants are sown round stumps or where the ash is especially thick; and the crop is left to the weeding of the people and the fertility of a warm, moist climate and virgin soil.

The Kenyahs and Kayans judge the seasons by the sun, and the method they adopt displays a wonderful knowledge of the precautions necessary to accuracy. The Kenyahs measure the shadow cast at midday with an instrument the Greeks would have called a gnomon. It is a pole set up near the village, guarded by a fence to keep away mischievous children and animals. In height it is more than a fathom by the span of the thumb and first finger. A piece of string weighted at each end and thrown over the top shows when it is perfectly upright. The length of the shadow is measured by a stick called "*asu do*" which is marked with notches gradually approaching one another more closely as they get further from the pole.

The interval between successive notches represents the change in the length of the shadow in three days. Midday is known to be the time when the shadow cast by the sun is at its shortest, and the Kenyahs are also aware of the fact that the direction of the shadow at noon, though sometimes to the north sometimes to the south, is always in the same straight line. The Kayan method, which differs more in practice than in theory from the Kenyah, is to let in a beam of light through a hole in the roof and measure the distance from the point immediately beneath the hole to the place where the light reaches the floor. Their measure is a plank, made level so that round discs do not roll on it, and fixed in position and direction by chocks placed at the side. This shows that they know the sun to be always due north or due south at noon.

I can only suggest one reason why these people though they have got so far, have not invented a sun-dial. That is this. In the tropics there are many days near each equinox on which no sun-dial would be of use. When the sun in its yearly course passes from the north of the zenith to the south, its shadow is due west in the morning hours, due east in the afternoon. Any time-piece depending on the direction of the shadow must therefore fail. The difficulty might indeed be obviated, but no sundial could be devised which would in the tropics tell the time in every month of the year.

This then is their instrument, in which no point essential to accuracy has been neglected. The measuring stick has been notched in accordance with the experience of previous years, and when the shadow, after lengthening during May and June, begins again to grow less, the house assembles and by mutual consent they decide when to plant. The best time for planting has not arrived until the noonday shadow is the length of the forearm from the tip of the fingers to the inside of the elbow. When the shadow is less than the length of the hand, sowing is not likely to prove very productive. The measuring stick is left in charge of some old and presumably wise man, less capable than his fellows of hard work, who sees to it that the shadow is not measured obliquely and reports the favourable moment. This man is excused from farming and is supplied with necessaries in return for his services. In good years he naturally is very well treated.

It would be pleasant to stop here, and say that otherwise the Kenyahs care nothing about the heavenly bodies. But having given the bright side of the picture and shown how they have acquired some accurate knowledge, the result of long and genuine experience, it is only fair to state that they lay almost equal importance on the meaningless mummery with which these mysterious measurements are accompanied. Such important operations could hardly fail to be overlaid with superstition.

Notes of Visits to Puket, Ghirbee and Trang.

By C. W. KYNNERSLEY.

Left Penang at 5 p.m. on Friday, 27th February, 1903, in s. s. *Avagyee*, (owned by KOE GUAN,) which trades between Penang and Rangoon calling at the Siamese ports *en route.*

Arrived at Pukét at 2.30 p.m. on 28th. Since I was there two years ago quarantine sheds have been put up opposite the light-house and there is said to be a good water supply there.

The harbour continues to silt up and undoubtedly the mining works have made matters worse. Where I landed last time is now a high mud flat which I hear is going to be mined.

The site of the present town is all tin land. The principal road to the landing place has been diverted to allow a mine to be opened. Borings are being taken by the Government Offices and if tin is found the site will be sold and new Offices built elsewhere. Everything is sacrificed to the mines. At the present price ($97) it pays well to work mines which were given up at my last visit when tin was about $60. SIM BEE has been very busy laying out new roads. The road which the late Commissioner was opening up has of course been abandoned as a bad one. A new road (60 feet) has been laid out by the edge of a new mine parallel to the principal shop street, the land on either side which is low being filled in with the overburden from the mine. Shop houses will be built and a new market erected. I noticed several improvements since my last visit. Then the place swarmed with pigs. These have been banished outside the town. On the outskirts of the town among the brushwood I noticed the mounds of new Chinese graves. SIM BEE said he was going to stop indiscriminate burying and have a Chinese Cemetery. The last Commissioner said the same. The last

Commissioner told me he had put a stop to clearing hill sides for hill padi. SIM BEE said he had stopped it. Jungle fires are still frequent and there is no timber to speak of left near Tongkah. SIM BEE talks of a Forest Department under an Officer from Bangkok. A beginning has been made to put the main road to Naito (the other mining centre) into repair and a mile and a half has been done. A new road is also being made in the direction of Pa Prak, the old telegraph trace made by the former Commissioner, with poles and wires still standing, being abandoned as bad. New poles have been ordered and the wire will shortly arrive. I was assured that the line would be in working order in a few months. The trace goes through Kesúm, Pungá, Ghirbee and Trang to Na-kón when it joins the line from Kedah to Siam.

Cultivation does not seem to be encouraged and no one cares to plant so long as mining pays so much better. The mines absorb all the labour. Rice, fruit and provisions of all kinds are imported. It is a splendid place for coconuts but hardly any are planted. Fruit and vegetables come from Penang. I went to see the Judge sitting in Court. He is not overworked. There are about two cases a day. Only five people were present including a prosperous looking Chinese interpreter. We then went to the Court below which is presided over by the Ampúr who takes all petty cases and preliminary enquiries. Most cases are compromised. There is said to be little crime or disorder. Everybody is hard at work making money at the mines. The Ampúrs are poorly paid and it cannot be wondered at that they supplement their salaries.

After lunch I started for the mining town at Naito. We were escorted by two Siamese armed Police mounted on little Siamese ponies which trotted behind the carriage. At the place where the good road ends and a bridge is to be built we got into a Java pony-trap. From this point the state of the road is too awful for words, big stones, ruts and holes. It is certainly the worst road I ever attempted to drive over but we got along somehow—generally at a walk. When it was hilly we got out and walked. The jolting was frightful. Naito is about six miles off and we passed through open grass country with scrub on which buffaloes were grazing. The whole country seems full of tin. Among the low jungle hills cuttings have been made and in the wet season the tin is washed down. Naito has a large Chinese mining population and consists of a long street. Hundreds of coolies were assembled and the Gambling Farm was densely packed. Only Chinese are allowed to gamble, not the Siamese. We looked in at the Ampúr's Office and then walked on a mile or so along a sort of road in the direction of the highest hills (about 1,700 feet) through which there is a pass where there is a wonderful acqueduct on trestles across the valley constructed by Chinese for bringing water to the mines. We had no time to go there but I have seen a photograph of it. Returning to Naito we had some tea at a Chinese Toukeh's. I asked what he thought of the road He seemed hopeful and said it would be all right next year. He added that it used to be worse but this I think is impossible. There is a great deal of traffic on it, a stream of mining coolies, a good many buffalo carts and some gharries such as are used in Province Wellesley. Naito is famous for its water melons which are sent to Penang. One of the duties of the Ampúr, who is a sort of District Officer, is to report on mining applications and find out if the land is owned by anyone. They get low salaries, and are often corrupt.

After saying goodbye I entered a small dug-out which was hauled by 8 Siamese over a mud flat (dry) into the river or creek, whence in a boat we went off to the *Damrong Rat* which SIM BEE kindly placed at my disposal. He came on board to see me off and at 8·30 we steamed out of the harbour. The nephew accompanied me and I felt quite at home once more on the *Rat*. I had been solemnly warned in writing on good authority that the boilers of the *Rat* were pronouuced to be in a dangerous condition and I was warned not to go in her. I had however arranged to go in her and it was only an additional peril to a voyage in this rock-studded sea. I mentioned to JOO KEAT that I had been told the boilers were rather old. He said the Engineer of the *Ran Ruk* had patched them up and there were to be new boilers *next year*. This was consoling. It was blowing fresh but was not very rough. As we dodged among some rocky islands I said "I suppose the Captain knows the way?" I was informed that there were two Captains. After this I rested in peace. Passed a long island on the left of Pulau Panjang where there are said to be 300 or 400 Malays who plant mangostins, the soil being good, and a few Chinese who advance money to Malay fishermen. No signs of habitation were visible and it was said they were at the back of the island. Passed under some high limestone rocks with caves with rattans hanging down said to be used by edible birds-nest collectors. No sign of life till a little North of Ghirbee where there was a fringe of coconuts with a mountain somewhat like Kedah Peak inland (Khaw phanum.) There were masses of limestone hills as at Pungá but not so high. There are two mouths to the Ghirbee river and we followed the one to the right, the usual mangrove creek, and after two or three bends came to a landing stage on the right bank about 1.30.

The Assistant Governor came off in a house boat and I was received on the jetty by the Governor whom I had met before at Trang. Officials and a Police guard were drawn up. This is the new town site. The Governor took us to a temporary house where we were served with tea and cigarettes. He said " This is a poor house. I am making the new road you see and I hoped to move the town here but it will not be till *next year*." I said I should very much like to see it and we walked round preceded by Police with a man carrying an umbrella over me. The Siamese seem to have a craze for moving towns. It is interesting work no doubt and gives the Governor something to do but when these new roads—a kind of circular road with two roads leading to the sea and a very steep one to a wharf on the river—are completed the question is whether, except under compulsion, the people in the old town or village some miles further up the river will occupy the sites. The site is said to have been approved by Prince DAMRONG. I had not time to visit the present town so I cannot say if it is worth moving. As in all new Siamese roads trees are planted at intervals on either side of the road but the ansana stumps (*Pterocarpus endicus*) do not seem to grow as they do in the Straits probably owing to the prolonged drought. Other trees are doing well. The Governor is a pleasant genial man and a sportsman. He talks a certain amount of English. He said it was a very good country for sport. He had shot an elephant and another was shot a few days ago.

There were also deer and rhinoceros and tigers. There is little cultivation in Ghirbee and no tin. The revenue is very small but no doubt it has undeveloped resources. The coal or rather lignite is of no value. He said that people were afraid to settle there till he came on account of dacoits. Two Siamese murdered a Chinaman and robbed his house and then killed an old woman to keep her mouth shut. They were caught and executed at the place. I had heard of an execution recently taking place and asked if that was the case. He informed me that the affair took place over two years ago and the men had just been executed. The law's delays were in this case protracted. I asked if it wasn't rather a long time to keep the men under sentence but he said : "We had to get the order from Bangkok and then they appealed." I told KEAT if they wanted a name for the new town they might call it Pi Nah (next year)* On our return we were regaled with long glasses of coconut water and cigars. At 2.30 we took leave as the tide was falling. We had intended taking a short cut through an inner channel inside Khaw Fu and Ma Fu but they said there was only a depth of 3 feet in places and many rocks, so we went out to sea and round Pulau Lantar. This took a long time and it got dark. We passed several rocks and islands and did not get to Telibon anchorage till 11.30 p.m. when I turned in on deck. The wind had blown from the West all day but at night there was a land wind. We found the Tongkah Police launch at anchor. She had been sent on ahead to inform the Governor of Trang of my visit.

Wednesday, 4th March.—Got up about 7 a.m. and after tea landed at the Custom House—a few Sam-sam huts—fine beach for coconuts but only one growing. A Chinaman advances money to fishermen and bark collectors. Very low tide early, turned about 7.30 when we started. Anchored at 9.30 at firewood jetty up Trang river and waited for tide to rise—breakfast. At 10.30 stuck on mud bank and waited ½ an hour till enough water. Got to Kantán at 11.30. Pepper and fowls being put on junk for Penang. The Governor PHRA SUTHON on landing place, Police Guard, 3 carriages Scarlet (faded) livery. Drove to SIM BEE'S house and bathed. He mentioned Yong Setàr the chief place in Pelian and I asked what 'Yong' was. He said it was the Siamese contraction of Tanjong. I think there is no doubt that Junk Ceylon is a corruption of Yong (Tanjong) Phalúng or Salúng. Phalúng was the great mining place before Tongkah mines were worked at the end of the promontory or island which we call Junk Ceylon. I never quite believed in the 'Ujong Sálang' derivation. There is no town at Kantán which is the seat of Government. The former town of Kuantãní was demolished about 10 years ago. It is about 6 miles higher up the river. On the opposite side of the road facing the wharf at Kantán is a row of about half a dozen Chinese shops an this constitutes the town. The houses of the Officials are built along a country road and the Government Offices (still in course of construction) stand on a low hill above the river and road. After lunch we went on board the launch with the Governor up the river which winds about till we got to the landing place near the site of the abandoned town. We might have driven the whole way but carriages were sent on. Along the banks is a fringe of jungle with padi land beyond. The site of the old town appeared to be a good one, high ground with fine old ansana trees. Only a Wat and a few attap huts remain among fruit trees. We stopped at one place near to see 33 big cannons taken from Kedah when it was overrun by the Siamese. They are piled up among brushwood. The road is a good one. We drove from Kuantãní. It is simply a red earth broad road and in dry weather dusty. There is hardly any wheel traffic but it is largely used by people walking from place to place. It would be excellent for bicycling. We crossed several streams on timber bridges, *gium* a hard wood being used for supports and planking. The village of Bong Rat was passed. Padi fields cultivated by Siamese extended on either side where the land was low. A drive of about 5 miles brought us to the town of Tap Tiang. Along the main street are brick shop houses and there is a considerable Chinese population. A great Market is held every three days. It has been held that morning and I was sorry to miss it for it must be an interesting sight. The Market which is farmed for $100 a month is held in a large square building. Long attap sheds open at the side extend round the sides and there are two cross sheds. Produce from country is brough in on Market days and disposed of. Meat, fish, poultry, fruit and vegetables have divisions of the Market set apart for them. It is very largely attended. Chinese Societies have been suppressed and the former Kongsi house has been turned into the Ampúr's Office. Along the road from Kantán newly cut telegraph posts were lying and are to be set up shortly. The telegraph goes to Na-kón. The wire from Kedah to Singgora goes through Na-kón to Bangkok. The line is being laid from Kantán to Ghirbee, Pungà, Kesún to Pukét. The posts are of hard wood and cost $1.20 each where felled, being taken to the road by Government. They are said to be ready for putting up as far as Na-kón and in the Eastern State adjoining Trang the Pân palm which is said to be durable is used. Shade trees has been planted the whole way. From Tap Tiang we walked about 2 miles till we reached the Rest house where we were to sleep. It was built for the reception of the King who however did not use it. It is a good house standing high everlooking the plain with the hills in the distance. Trang is famous for its good pepper which commands a high price and is said to have a special aroma. There were plantations on either side of the road. The pepper vine is trained on two sorts of soft wood trees, mengkûdu and dedap. The vines are grown on red soil which is kept clean. During the dry season, which lasts several months, the plants are regularly watered from wells. The planters are all Chinese chiefly Cantonese and a few Hokiens. At Yong Setár pepper is grown in black soil by Tiochews who do not water the plants. If watered when young it has to be continued. To the East are the hills on the way to Na-kón, then the Patălóng hills with the highest range Foi-dow, and further south Pelian and Setúl. The climate on the East of the hills is said to be quite different. Padi there is two months later and when it is dry this side it is wet beyond the hills. Trang, Girbee and Pungá were formerly under Na-kón which lies to the North of Sang-Kla called by the Malays Singgora. Na-kón is called by the Malays Le-gúr. The Malays, except the fishermen near the coast, hardly speak any Malay. They are Mahomedans and don't eat pork but in other respects they adopt Siamese ways. There are one or two Mosques but they are badly attended. The Siamese keep pigs. The Chinese marry Siamese girls. No burial grounds are to be seen, the Siamese being cremated at the Wats. There is a Chinese burial ground at Tap Tiang. There are Siamese Schools about the country—education being free. One with 80 boys is about a mile beyond the Rest house and I meant to visit it but had not time. It is held at the Wat and boys from the villages beyond walking distance are lodged at the Wat. The Kam-nán makes boys go to School. There are also Chinese private Schools. The upkeep of the Government Schools, cost of books, etc., is defrayed from the Market rent at Tap Tiang.

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*Spain is the land of Manana, in Siam it is always "Pi nah."

The village administration is cheap and appears to be well adapted to the needs of the country. It is the Siamese system either based on, or like that of Burma. There is no forced labour. In Trang are 5 Ampúrs, 1 for Kantán, 1 for Pelian at Yong Setár, 1 for Bong Rat at Tap Tiang, 1 for Khaw Kow (white hill) North of Patălóng and 1 for Si Kow near Ghirbee. The Ampúr holds a Court for the trial or settlement of small cases—cases of importance being sent before the Judge at Kantán. An Ampúr gets 100 Ticals a month and allowances and he probably adds to his income. The only police in the country are at Kantán where they are chiefly ornamental, 12 at Tap Tiang (Chinese town) and a few at Yong Setár, where there are Chinese pepper planters. The Siamese and Malays are very law abiding and give no truble. Under the Ampúr is the Kam-nán or village headman. Of these there are about 30 in Trang. In one or to places where the Chinese predominate a Chinaman is Kam-nán. Under the Kam-nán is the Phoo-yai-bán or head of 10 houses. The people of 10 houses or any collection of houses up to 20 elect the Phoo-yai-bán and Phoo-yai-báns elect the Kam-nán, one of their number. The Phoo-yai-bán receives a badge of Office in the shape of 5 silver buttons which he wears on his coat and the Kam-nàn has 5 gilt buttons. At intervals along the road are boards on which is notified the name of the village and the position of the Phoo-yai-bán's house. The village headmen look after the roads and bridges and road side trees, the road being kept up by the people except where it passes padi fields. The coolies who sweep the road and keep it clean are paid. The trees are planted twenty-four feet apart. The only land revenue is a tax on padi land 8 cents a rei=120 square feet. This is paid to the Ampúr who keeps a register. He can keep $300 in his sub-treasury. Over that he must send to Kantán. The Kam-nán and Phoo-yai-bán get 5% commission on this padi-land tax. The owners of padi land have a document of title (corresponding to the Malacca 'extract') giving the name of the owner, the extent of the land and its position. No charge is made for land for other cultivation than rice, *e. g.*, pepper, coconuts. There is an export duty on pepper of 60 cents a pikul (said to be fixed by treaty). The present price for pepper is high $36 a pikul. The export duty on other produce timber, etc., is 10 per cent. *ad valorem* and the import duty is 3 per cent. Chinese get on well with Siamese and in the country go to the Wat. I noticed that men and women all have distinct vaccination marks, this is done by two Siamese doctors at the Ampúr's. There are no taxes—no house tax—except on padi land and on fishing which varies according to the fishing ground from $1 to $10 a year. If other taxes were imposed the Siamese would leave. There is no tax on fruit or coconut plantations or sugar or pepper. Land can be sold, the new owner getting the document of title. There is no tax on felling timber—only export duty. The population of Trang is 59,000—12,000 Malays and Samsams, 4,000 Chinese and the rest Siamese. The Revenue is about $120,000 and the expenditure $80,000. The Opium Farm is not included in the Revenue as it is reckoned as part of the Western States Farm. It may be taken as $65,000.

The Revenue is made up as follows:—

Gambling	$25,000
Spirits	25,000
Customs	60,000
Land, etc....	10,000
	$120,000

Including the share in the General Opium Farm the Revenue exceeds the Expenditure, (*i. e.*, what is sanctioned in the Budget) by about $100,000 which is remitted to Bangkok to provide for the needs of the poorer States. There is a proposal to abolish the Gambling Farm and impose a poll tax on all males over 18. In the Eastern States where there are few Chinese this has been done. Since the Siamese were prohibited from gambling there has been scarcely any crime. Cock fighting is very popular.

The expenditure may be roughly stated as follows :—

Salaries	$30,000
Roads, etc.	20,000
Buildings	20,000
Other Expenditure	10,000
	$80,000 *

(*Diary continued*)

We got to the Rest house at 7.30 p.m. and had to wait for the cook and boys.

Thursday, 5th March.—It was not as cool as it ought to have been. When we got there the Governor said "It is not cool now because there is a wind—if there is no wind it is cool." The wind died down and then it was unmistakeably hot. We made a start at 6.40, KIAT driving me in a dogcart and the Governor following on a pony. The horse was inclined to jib and was only induced to go on (except down hill) by the syce shoving behind. I remarked that we should take some time to get to our destination (11 miles) but KIAT said "It will go very well when it gets tired." There seemed to be little prospect of this so long as the syce pushed us along but when once started it covered the ground well. On sighting a bridge the custom in Trang is for the syce to get down and test the bridge to see if it will bear. We passed through an extensive padi tract—a good deal of it being recently cleared. The Siamese, I should say, are quite as lazy as Malays if not more so. The ground planted with padi is only roughly cleared of timber, and stumps of trees are left. In time these become white ant mounds which are undisturbed—"too much trouble to remove" they say. I saw a large number of fine damar oil trees, some standing alone in the plain and some hundred or so together. The solitary ones are tapped with burning holes and these trees would only last about 5 years. They are not allowed to be filled when the jungle is cleared for padi planting. The oil is sent to Penang in tins. There are said to be many damar trees on the Na-kón road and on the islands. SIM BEE told me that when he went to Trang the only talk was of dacoits and people were afraid to settle. Now they are not afraid and land is being taken up fast. The road was being swept like a drive and where there was a collection of houses the people turned out with their headmen and saluted by the roadside. The road was more or less level till we got to the foot of the hills (11 miles). At Chong is a rest-house and a clear stream from the hills. The road to Patălóng here rises through a pass. We walked through jungle along a path to what is called a Waterfall, large slabs of rock and pools but not much fall. In the rains of course it is a cascade. We crossed the stream on stepping stones and looked for orchids. We found a few and then had some food by the stream. Then we drove back to the Rest-house and bathed at a well in the grounds. I noticed *Congea* climbing among the brush wood. We left Chong about 10.0 and got the Rest-house at 11.30. There is another Rest-house 1 hour up the pass above Chong in the jungle where the King of Siam stayed two nights but he is said to have found it too cold. This would be a good place for collecting plants, etc. There are trees planted on either side the whole length of the road—Mangoes, ansana and a Siamese tree with a narrow leaf and yellow flower from which they make hair oil.

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* Figures only approximate not official.

As we passed through Tap Tiang to go to the landing place at Tha Chin we saw a dead black planther by the Market. Black panthers are said to be very common. There is a reward for tigers, 30 Ticals, but none for panthers which only take fowls, pigs, etc. There are too many for a reward. There were 12 junks at Tha Chin built locally and registered at Penang. We had a very hot and tedious row in a house-boat—the river winding backwards and forwards—till at 3.15 we got to the wharf at Kuantănı́ where the S. S. *Artsadong* comes for cargo. Here a Malay Penghulu registered as a British subject came on board. We got to Kantán at 5.0. I landed and drove with the Governor to see the Public Offices—still unfinished. The bricks are made by prisoners. The Offices will be finished "next year." Left Kantán in the *Damrong Rat* at 5.30. The tide was falling and we touched the first bar or mud flat at the 'Simpang'.

As we went up the river the serang had ordered firewood to be sent to Kantán for us but it never came so in their usual casual way we began our voyage without fuel. At the firewood depôt below the bar we had to anchor for two hours while we took in firewood. It was getting dark and there was no one in charge so they requisitioned boats passing down and eventually our men took a sufficent supply. It was very hot lying at anchor and mosquitoes came off. We had to dine there. As we got to sea there were very black clouds and thunder and lightning. There was a bit of a moon but it came on to blow and the rain drove us below.

Friday, 6th March.—Off the north of Lankawis early—cool —went very slow. Six tame porpoises came and played within a foot of our bows and kept it up some time. We took hours to pass Kedah Peak and it was 4.0 p.m. before we got to the Penang Jetty.

Hunting Invocations.

By R. N. Bland.

In the October "Blackwood" there is an article by George Maxwell on the subject of a Malay deer-hunt in Perak. I think he has given some excellent translations of the "Elmu Pawang" as applied to the rusa or sambur deer, and written a most interesting account of the way in which the Pawang sets to work. It may interest him and others to see an invocation I got from a Pawang in the Negri Sembilan (Kuala Pilah) years ago. My "Elmu Pawang" is not nearly so ornate as George Maxwell's, but no doubt every village and district has its own ritual in these matters. There is a family likeness, however, in all of them. The Pawang who is an educated man from the Malay point of view, will produce a much more elaborate "elmu" than the Pawang of a jungle village. It is interesting to compare notes in these matters and therefore I send you this "elmu" for the S. B. R. A. S.—but I feel as if I were betraying a secret in doing so. These matters are highly confidential. My Pawang only admitted me to his "craft" under promise of secrecy and in payment of the customary fees in cloth, knife, coconuts, and "wang bharu", and after following the deer on foot for many days through the Muar jungles.

Elmu Pawang Buru Rusa.

(Negri Sembilan.)

Hei Che' Lanang, Che' Redup,
Che' Bendang, Che' Merah,
Mari-lah kita berburu
Dalam kandang bhagian engkau
Luar kandang bhagian aku
Apa main kita jangan di-rosakkan

Aku tahu jahat-nya
Aku tahu baik-nya
Jahat pulang pada engkau
Baik pulang pada aku
Salah sa'ekor srigala Che' Langsat
Che' raia ini ia-lah melengkah bumi
Yang lari Che' Runsing
Kaki yang mengijar Che' Rimbun
Ekor melampat patah kaki
Menyenup patah pinggang
Menyelodok badan kau lampoh
Bukan-nya aku yang berburu
Perpatih yang berburu
Bukan-nya aku yang punya anjing
Pa sidi yang punya anjing
Bukan-nya aku yang berkuei
Nenek Batin Telang yang berkuei
Jangan engkau mungkirkan janji
Jikalau engkau mungkirkan janji
Drahka engkau pada Allah.
Hei Che' Lanang Che' Redup
Che' Bendang Che' Merah
Ambil bhagian engkau
Yang terbawa bhagian aku
Yang tinggal bhagian angkau.

Badi

Hei Badi aku tahu asal engkau
Jadi deri-pada Chaga
Beranjak engkau deri sini
Pulang engkau ka asal jadi
Kropek nama-nya manchong
Kiamang nama-nya kiak
Che' Lanang orang gobala
Tergak Dato' nibong salah
Mari-lah kita membalakan anjing
Bunohkan juga anjing aku
Sa'ekor sa hari bunokkan juga
Anjing aku.

Translation.

Ye (forest spirits that guard the red-deer)
Che' Lanang—the Twister
Che' Redup—the Dim One.
Che' Bendang (the open plain)
Che' Merah—the Red One
I summon you to hunt with me
What comes from the enclosed fields is your share
What comes from the outer forest shall be mine
Let nothing spoil our hunting
I know what to avoid
I know what to follow
May all the bad luck be your share
May all the good luck fall to me.

Whether it be Srigala or Che' Langsat
Or the King of the Deer himself
Yea, he who crosses the world at one leap
Or Che' Runsing who flashes hither and thither
May each one that leaps forth fall with broken legs
May each glider be broken across the back
May each one crushing through the bushes have broken bones
It is not I who destroys you
It is the Lord Perpatih who hunts you
The dogs are not my dogs
They are the dogs of Pa' Sidi
It is not I who shouts on the dogs
It is the shout of Nenek Batin Pelang
Fail ye not in your compact
If ye fail in your compact ye are rebellious against Allah.
O Che' Langsat—the Twister
Che' Redup—the Dim One
Che' Bendang—the "open plain"
Che' Merah—the Red One
Take what is yours
That which is carried away is mine
That which remains is yours.

Badi—Invocation.

O Badi I know whence thou comest
Thou comest from Chaga
Get thee from hence
Get thee to the place whence thou comest
Che' Lanang the herdsman
Remember the elder of the magic nibong
Come hither and make atonement for our dogs
Shouldst thou wish to slay my dogs
Slay them, yes, one every day.

Descriptions of New Species of *Iphiaulax* and *Chaolta (Braconidae)* from Sarawak, Borneo.

BY P. CAMERON.

It is evident that the genus *Iphiaulax* is, in the Tropics at least, one of the largest of the Parasitic Hymenoptera. Mr. Shelford, the collector of the species here described, informs me that he has a large number of species which still remain to be described or named.

IPHIAULAX FOERSTER.

a. Luteous, the wings large, yellowish-hyaline, the stigma with a black mark at the base. The group of *leptopterus.*

Iphiaulax megapterus sp. nov.

Dark luteous, the 2nd. and following segments of abdomen much darker, almost black; flagellum of antennæ black; wings very large, yellowish-hyaline; a somewhat square black spot at the base of the stigma, commencing shortly behind the cubitus and transverse basal, and backwards extending shortly beyond the cubitus; there is a narrow cloud on the lower side of the wing at the apex; the hind wing has the apical fourth fuscous, the cloud on the lower side extending backwards to the middle; basal 5 segments of abdomen closely, longitudinally striated; the area on 2nd segment large, reaching to the end; broad at the base, becoming gradually narrowed to the apex. Apical abscissa of radius long; more than half the length of 2nd., which is distinctly shorter than the 3rd., that being not much longer than the basal two united; the recurrent nervure is received in the apex of the 1st cubital cellule; the 1st transverse cubital nervure is roundly obliquely curved. ♀.

Length 20; terebra 17 mm.

Hab. Matang.

Scape of antennæ not much longer than the following 2 joints united, slightly gradually dilated towards the apex, which is toothed slightly below; the pedicle short, not clearly separated, thickly pilose, not half the length of 3rd. joint. Front and vertex smooth and shining, almost bare, the former not furrowed; face irregularly shagreened, thickly covered with long fulvous pubescence; its centre bounded by longitudinal furrows; apex of mandibles black. Thorax shining, smooth; the middle lobe of mesonotum raised; median segment short, covered with pale fulvous pubescence. Legs coloured like the thorax, sparsely haired; the fore tibiæ not quite so long as the basal 3 joints of the tarsi. Abdomen large, its middle clearly broader than the thorax, and twice its length; its first segment keeled down the middle; the dilated apical part with some stout longitudinal striæ and obliquely narrowed at the base; the 2nd. segment is closely, longitudinally striated throughout; the 3rd. similarly striated to the middle, the 4th. before the furrow; the base of the 3rd and 4th smooth and shining; the rest of them and the 5th closely rugosely punctured; the apical segments less strongly punctured; all the transverse furrows are deep and strongly striated; the obliqued lateral furrows are short, indistinct. Temples broad, rounded; occiput roundly incised.

This species has the large yellow wings, with black spot at the base of stigma and general colouration of *I. leptopterus;* but it is much larger and more stoutly built; otherwise it may be separated from *leptopterus* and its allies by the striated, punctured abdomen, by the curved 1st. transverse cubital nervure and by the much shorter, compared with the 3rd., 2nd. abscissa of radius.

Iphiaulax leptopterus Cam.

The ♂ of this species has been taken at Santubong, 2600 feet by Mr. Shelford. It agrees closely with the ♀.

Iphiaulax spilostigmus sp. nov.

Luteous; the wings and their nervures luteous, a square black mark, not extending beyond the cubitus, at the base of the stigma, the hind wings with a fuscous cloud at the apex; the 3rd. abscissa of radius almost equal in length to the 2nd.; the 1st transverse cubital nervure and recurrent straight, oblique, interstitial; the basal two segments of abdomen striated in part. ♀.

Length 12; terebra 6 mm.

Hab. Matang.

Face covered with long blackish hair; front deeply furrowed in the middle; temples roundly narrowed; occiput transverse. Scape and pedicle of antennæ rufous, the rest black. Thorax smooth and shining; the middle lobe of mesonotum raised in front. Fore tibiæ slightly shorter than the basal 3 joints of tarsi united. Wings long, large; yellowish-hyaline; the mark at base of stigma is square, does not project beyond the transverse basal or cubitus; the 2nd. abscissa of radius equal in length to the 3rd.; the recurrent nervure is interstitial. Abdomen as long as the head and thorax united. First segment of abdomen broad, shorter than the second segment; the central part roundly raised; irregularly longitudinally striated; a stout keel thickened at the base and furrowed laterally, down its centre; the 2nd. stoutly striated to near the apex; the central plate, broader than long, narrowed to a point, smooth and shining; its keel extending to the smooth apical border; on either side is a somewhat similar smooth, broader than long, triangular plate; the suturiform articulation closely striated; the other furrows, smooth; there is a striated transverse furrow before the apex of the 2nd. segment; the abdomen is as long as the head and thorax united and broader than the latter.

This species may be known from *I. leptopterus* by the basal abdominal segments being striated, by the shorter and broader abdomen and by the stigmal mark not extending beyond the cubitus.

b. Luteous, the wings large, yellowish-hyaline, without a black mark at the base of stigma; the hind femora black.

Iphiaulax minos sp. nov.

Luteous, the flagellum of antennæ and hind femora black; the apex of hind tibiæ blackish; wings longer than the body, yellowish-hyaline; the stigma and nervures luteous; the costa darker coloured; the 3rd. abscissa of radius nearly as long as the basal two united; the 3rd. abscissa of cubitus distinctly shorter than the 2nd.; the 1st fully half the length of 2nd.; recurrent nervure received close to the apex of the 1st. cubital cellule. ♀.

Length 15; terebra 9 mm.

Hab. Matang.

Face distinctly punctured round the sides and top; the centre smooth and slightly convex; the front is less strongly punctured, its middle depressed and furrowed; temples roundly, obliquely narrowed. Thorax smooth and shining; the parapsidal furrows deep on the basal half of mesonotum. Scutellum smooth, roundly convex. Basal two segments of abdomen strongly, longitudinally striated; the 1st. if anything, more coarsely than the 2nd.; the basal half of the 3rd. finely and closely striated; lateral furrows of the 1st stoutly, transversely striated; the 2nd. and 3rd. are depressed largely on the sides; the suturiform articulation and the furrow on the next segment narrow, deep, closely straited. Legs densely covered with pale hair; the fore tibiæ distinctly longer than the following two, but not so long as the following 3, united.

Has the long yellow wings of the *leptopterus*-group; but wants the black stigmal mark; and hind femora are black, this last being a well-marked feature.

c. Head, thorax and fore legs rufous, the abdomen and hind legs black; wings yellowish, obscured with fuscous; large. The group of I. *Sadyates.*

Iphiaulax soranus sp. nov.

Black; head, thorax and 4 front legs ferruginous; wings hyaline, the basal half with a distinct yellowish tinge; nervures and costa testaceous-yellow, the costa black; third abscissa of radius slightly shorter than the 2nd.; recurrent nervure received in the apex of the 1st. cubital cellule; the transverse median nervure on the outerside of the tranverse basal. ♀.

Length 15; terebra 16 mm.

Hab. Matang. December.

Abdomen longer than the head and thorax united (its basal 3 segments as long as the thorax) not dilated in the middle; the centre part, except at the base and narrowly at the apex, strongly irregularly longitudinally striated and laterally irregularly reticulated; the 2nd. segment strongly longitudinally striated; its basal area small, longer than broad, smooth, shining, gradually narrowed to the apex; its keel stout, reaching to the apex; on either side the base has a large smooth space, longer than broad and produced on the outer side towards the middle of the segment, this part being slightly curved and aciculated, almost striated. Suturiform articulation wide, closely striated; the lateral branch is narrower, closely striated and curved; the space between it and the articulation raised, smooth and shining; the 3rd. segment is more finely and closely striated on the basal two-thirds and has a keel down the centre of the striated part; the furrow on the base of the 4th. segment is distinct, deep and irregularly sparsely striated; the base of the segment is finely irregularly, closely striated and with a keel in the middle. Ovipositor sheaths broad, densely covered with stiff black hair. Scape of antennæ about 4 times longer than wide, narrowed at the base. Temples rounded, slightly oblique, as long as the antennal scape; occiput transverse. Face irregularly rugose, pale yellowish. Palpi dark red; mandibles reddish, black at apex.

Iphiaulax ezerias, sp. nov.

Black; the basal 2 joints of antennæ, head, thorax and 4 front legs red; wings hyaline, highly iridescent, faintly tinted with yellow; the stigma and nervures pale testaceous, costa darker coloured, parastigma black; 2nd. and 3rd. abscissæ of radius equal in length.

Length 8 mm.

Hab. Kuching. September.

Scape of antennæ about 4 times longer than wide, covered with long glistening white hair; 3rd. joint longer than 4th. Front and vertex smooth and shining; front broadly depressed in the middle; the depression roundly narrowed above; in its centre are 2 short, stout keels, oblique and united together above.

Temples longer than antennal scape, broadly rounded behind; occiput not quite transverse. Face strongly and closely punctured; its centre raised, roundly narrowed above, more shining and more widely punctured. Clypeus clearly separated by a furrow from the face, smooth, except for a transverse row of large punctures in the middle. Palpi and mandibles rufo-testaceous, the latter black at apex. Thorax smooth; the middle lobe of mesonotum clearly separated; metanotum covered with pale hair, punctured, its apex blackish and obscurely punctured. Basal segment of abdomen raised in the middle; the sides stoutly keeled; and there is a stout keel down the centre; 2nd., 3rd. and 4th. segments closely, strongly, longitudinally striated; the apices of the 3rd. and 4th. smooth; the base of 5th. finely striated; the area on the base of 2nd. segment becomes gradually narrowed into the keel which reaches to the basal third of the segment; it is bordered by 2 oblique keels which form a large, somewhat triangular area, which is irregularly reticulated on the inner side and irregularly longitudinally striated on outer; the lateral depression stoutly, closely, obliquely striated; the sides of the 3rd. segments are depressed and less closely punctured.

Iphiaulax cyrenius, sp. nov.

Black; the 4 front legs, head, pro- and mesothorax and lower half of metapleuræ rufous; wings fuscous-violaceous, the nervures and stigma black; fore tarsi more than twice the length of tibiæ, their basal 2 joints being longer than the latter; basal plate of 2nd. abdominal segment small, roundly, gradually narrowed to the apex and with a smaller, smooth, triangular plate on either side; the keel extends to the apex, where it ends in a small, broader than long, plate. ♀.

Length 13-14 mm.; terebra 13 mm.

Hab. Kuching. December.

Face smooth and shining in the centre, the centre being flat, bell-shaped; the sides punctured; the sides and clypeus covered with long blackish hair. Ocelli enclosed by a U shaped furrow, from which a furrow runs to the base of antennæ. Temples longer than the scape of antennæ, rounded behind; the occiput roundly incised. Scape of antennæ thick about 3 times longer than wide; the tubercles prominent; the base of scape incised on the outer side to near the middle. Parapsidal furrows distinct; the middle lobe of mesonotum not much raised. Apex of metanotum with longish narrow foveæ, bounded by raised keels; its centre with a fovea. First abdominal segment from near the basal depression stoutly, closely, longitudinally striated; the lateral furrows stoutly, closely transversely striated; 2nd segment closely, stoutly striated; a keel runs from the lateral basal plates to near the apex; the space on either side of it closely striated; the 3rd. segment has the middle and apex smooth, the rest closely, not very strongly, striated the centre of the base laterally being smooth; there are no distinct oblique furrows on the 2nd. and 3rd. segments; the suturiform articulation is closely striated. Sheaths of ovipositor broad, densely pilose. The legs are thickly pilose, but not so densely as the ovipositor's sheath.

d. Luteous, the apical segments of abdomen black, the 2nd. and 3rd. segments strongly striated; wings fuscous, broadly yellowish-hyaline at the base.

Iphiaulax zaraces, sp. nov.

Luteous, antennæ, front broadly in the centre, the mark continued on to the ocellar region and becoming united to a large black band on the vertex; this marks reaches to the eyes and extends half way down the outer orbits and on to the occiput, which is entirely black; the 2nd. and 3rd. abdominal segments are largely marked with black; the 4th. and following entirely black. Head and legs of a paler yellow colour than the thorax and abdomen; the apex of hind tibiæ and the tarsi black. Wings yellowish-hyaline to the transverse median and transverse basal nervures; the rest (except for a hyaline cloud in the fore half of the 1st. cubital cellule and a small one at the junction of the recurrent with the cubitus) dark fuscous; the base of the stigma yellow. ♀.

Length 14-15 mm.; terebra 4 mm.

Hab. Kuching.

Antennæ longer than the body; the scape slightly more than twice longer than broad. Head smooth; almost bare; the face pale yellow; malar space hollowed; tips of mandibles black. Temples wide; occiput roundly incised. Thorax smooth; parapsidal forrows indistinct; furrow at base of scutellum smooth; the oblique furrow on mesopleuræ distinctly defined. The raised centre of 1st. abdominal segment is long, narrowed at the base; becoming gradually wider to the apex; the basal depression is triangular, deep, its lateral keels stout; the central part of the 1st. and the 2nd. and 3rd. segments are closely, strongly striated; there is no area on the base of the 2nd. segment; its sides at the base, as also those of the 3rd., are smooth; the furrows on the 3rd. and 4th are crenulated; 3rd. abscissa of radius about as long as the basal two united; the 3rd. abscissa of cubitus is distinctly shorter than the 2nd.

e. Yellow, the abdomen and hind legs black, wings fuscous, broadly hyaline at the base.

Iphiaulax thespis, sp. nov.

Head, thorax and 4 anterior legs luteous; the antennæ, abdomen and hind legs black; the wings to the base of cubitus and nervure yellowish-hyaline, the rest fuscous, the base at the base of the anal nervure hyaline; the hind wings yellowish hyaline to shortly beyond the middle; stigma black; the 2nd. abscissa of radius slightly longer than the 3rd. ♀.

Length 9; terebra 8 mm.

Hab. Matang. August.

Scape of antennæ about 4 times longer than wide, of equal thickness throughout, covered with short pale pubescence. Front and vertex smooth; the former deeply furrowed; face thickly covered with long white hair. Temples as long as the antennal scape, roundly narrowed; occiput transverse. Thorax shining, the middle lobe of mesonotum raised; the oblique furrow on mesopleuræ reaching near to the apex. Abdomen as long as the head and thorax united and wider than the latter; 1st. segment irregularly striated and with a distinct keel down the centre; the sides and apex yellowish, smooth; 2nd. segment closely, longitudinally striated; its basal area small, smooth, broader than long, obliquely narrowed to the apex; on either side of it is a smooth plate, longish, gradually narrowed to the apex; the 3rd. segment is irregularly, obscurely striated; the 2 transverse furrows are rufous, striated. Recurrent nervure interstitial.

Agrees closely with *I. portius* Cam.; that species is larger, has the median segment black; the plate on 2nd. abdominal segment larger, obliquely narrowed at base and apex, the 2nd. abscissa of radius distinctly shorter than the 3rd. and the recurrent nervure not interstitial.

Iphiaulax amyris, sp. nov.

Rufous, the abdomen, hind tibiæ and tarsi and antennæ black; the wings flavo-hyaline to the transverse basal nervure, the rest fuscous, except for a triangular hyaline cloud in the base of the 1st. discoidal cellule; the 1st. cubital cellule, except its lower third, along the cubitus, the base of the radial cellule, the parts outside the 1st. transverse cubital and recurrent nervures; base of stigma largely luteous; the 3rd. abscissa of radius about two-thirds of the length of 2nd.; the sides of the 1st. abdominal segment above pale yellow; the greater part of the 2nd. and the base of the 3rd. rufous. ♀.

Length 12 mm. terebra 14-15 mm.

Hab. Kuching. June.

Scape of antennæ and pedicle rufous below; the apex of scape incised; the 3rd. joint slightly longer than the 4th. Face impunctate, thickly covered with long white hair; temples longer than the scape of antennæ, broadly rounded behind; the centre of occiput transverse. The raised central part of 1st. abdominal segment roundly narrowed behind; the raised central part keeled, the apex closely striated. The 2nd. and 3rd. segments are closely, finely striated, with distinct, oblique lateral furrows; the basal plate of the 2nd. minute, shining, wider than long; the keel distinct, reaching to the apex; suturiform articulation closely striated; there is a narrower, less strongly striated, furrow on the base of the 4th. segment.

The abdomen is about as long as the head and thorax united and is not much widened in the middle; the fore tibiæ are as long as the basal 2 joints of tarsi united; the transverse median nervure is received on the outerside of the transverse basal.

f. Luteous, wings fuscous yellow at the base, the abdomen short, broad, ovate. The group of *matangensis.*

Iphiaulax Sibanensis, sp. nov.

Length 9 mm. ♂.

Hab. Mount Siban. May.

Very Similar in colouration to *I. matangensis*, having, like it, the head, thorax and legs luteous and the back of the abdomen for the greater part black, mixed with rufous, the wings yellow at the base, fuscous beyond the transverse median nervure; but it is more slenderly built; the scape of the antennæ and pedicle are fulvous, not black, more slender; the 2nd. abscissa of cubitus is only equal in length to the 3rd. not longer than it; it has no area on the base of the 2nd. abdominal segment, but there are two irregular keels uniting together shortly beyond the middle and having 2 or 3 irregular transverse ones; the space on either side of this instead of being, as in *matangensis*, widely, irregularly reticulated to the apex, is only reticulated at the base, the rest being closely, longitudinally striated; the punctuation on all the segments is closer and run more into longitudinal striæ; the abdomen is narrowed compared with the thorax and is more suffused with red, the red too, being lighter in tint; the suturiform articulation is more widely and distinctly dilated backwards at the apex.

Iphiaulax cilles, sp. nov.

Luteous, the abdomen darker coloured, the flagellum of antennæ and the hind tibiæ and tarsi black; the wings almost hyaline, iridescent, the stigma and nervures black; the plate on base of 2nd. segment smooth and shining, its length about equal to its greatest width; the apical half roundly narrowed; the keel extends to shortly beyond the middle; 3rd. abscissa about as long as the basal 2 united. ♀.

Length 7; terebra 3 mm.

Hab. Kuching. April.

Scape of antennæ luteous, narrowed at the base, about 3 times longer than wide; its apex produced below; pedicle rufous: the 3rd. joint distinctly longer than the 4th. Front and vertex smooth and shining, temples distinctly, roundly narrowed; face rugosely punctured. Middle lobe of mesonotum distinctly separated, the furrows deep. Abdomen as long as the thorax, ovate; the middle lobe of 1st segment is keeled down the centre and there is a keel on eitherside; the lateral depressions smooth, except for 2 or 3 keels near the apex; sides of 2nd. segment depressed at the base and obliquely striated; suturiform articulation wide, crenulated; the other furrow is less clearly defined especially at the sides; the 4th. and 5th. segments have narrow, shallow furrows on the apex.

The stigma and parastigma are large; the basal abscissa of the cubitus is roundly curved at the base; the recurrent nervure is not interstitial; the sculpture of the abdomen appears to vary in its intensity. Characteristic are the hyaline wings and black hind tibiæ and tarsi.

Iphiaulax tenuilineatus, sp. nov.

Luteous, the ocellar region and antennæ black; wings obscure hyaline to the transverse basal nervure, the rest fuscous, the 1st, cubital cellule lighter coloured than the rest, stigma black, yellow at extreme base; the area on 2nd. abdominal segment small, its width at the base, if anything, longer than its length; smooth, the sides rounded; the keel stout, reaching to the base of the apical third; the 3rd, 4th, and 5th. segments roundly projecting at the apex.

Length 11; terebra 6-7 mm.

Hab. Kuching.

Scape of antennæ fully 3 times longer than wide covered with golden hair. Face irregularly rugose. Clypeus above rounded. Malar space as long as the antennal scape, furrowed in the centre; temples as long as them, rounded behind, not oblique; occiput transverse; an impressed line on the centre of vertex behind the ocelli. Median segment short. Centre of 1st. abdominal segment rugosely punctured, keeled in the middle; the sides closely striated; the centre of 2nd. segment reticulated, the sides closely striated; suturiform articulation wide closely striated; there is no distinct lateral apical branch, it being only represented by a fovea; there is a distinct irregularly crenulated furrow on the apex of the 5th. segment ; the apices of the 3rd. and following segments are narrowly pale yellow.

Allied to *I. astiochus* and *I. matangensis* ; may be known by its larger size, longer ovipositor, by the temples being more rounded and not obliquely narrowed, and by the smooth, more clearly defined keel on 2nd. abdominal segment.

Iphiaulax paternus, sp. nov.

Luteous, the flagellum of antennæ black ; the wings yellowish to the transverse basal nervure, dark fuscous beyond, the stigma and nervures black, 2nd abscissa of radius distinctly shorter than the 3rd.; basal plate on 2nd. abdominal segment wider than long, roundly narrowed towards the apex which has a narrow keel, not much more than half its length. ♀.

Length 10 ; terebra 5 mm.

Hab. Kuching. September.

Scape of antennæ fully 4 times longer than wide. Temples roundly narrowed, not quite as long as the antennal scape. Front deeply furrowed. Face rugose, slightly reticulated. Top of clypeus rounded, it is less strongly rugose than the face. Tips of mandibles broadly black. The centre of middle lobe of 1st. abdominal segment with 2 stout keels ; the sides are also keeled ; the lateral depression wide, irregularly striated ; 2nd. segment longitudinally rugosely punctured ; the part bordering the area irregularly reticulated ; the sides are distinctly depressed on the basal half and closely, strongly, obliquely striated ; suturiform articulation wide, deep, crenulated and without an apical lateral branch ; the apex of the 3rd. segment has an indistinct crenulated furrow, there is a much more distinct one on the base of the 4th.; one on its apex and on the apex of the 5th.

The parapsidal furrows are distinct only on the basal half ; the apical half of the mesonotum is flat ; the basal 4 points of fore tarsi as long, together, as the tibiæ ; there is a distinct hyaline cloud below the base of the 1st. transverse cubital nervure, the 2nd. discoidal cellule is lighter coloured than the upper one.

Allied to *I. annulitarsis*, having a similar plate on the 2nd. abdominal segment, but may be known from it by the much shorter ovipositor, which, in *annulitarsis*, is as long as the body.

Iphiaulax smenus, sp. nov.

Dark luteous; antennæ, ocellar region and centre of front the transverse furrows on the abdomen, the base of the 3rd. segment and of the 4th. and 5th. broadly in the centre, black; the wings to the transverse cubital and the transverse basal nervures yellowish-hyaline; the basal half of the stigma yellow; its apical and the parastigma black; the apex of the wings fuscous, tinged with yellow and violaceous; the transverse median nervure received shortly beyond the transverse basal, recurrent nervure interstitial; the 3rd. abscissa of radius nearly as long as the basal 2 united. ♀.

Length 8-9; terebra missing.

Hab. Matang. August.

Head smooth; clypeus clearly defined by furrows; temples straight, oblique; occiput transverse. Scutellum not much raised above the mesonotum; its sides and apex with a long, slightly oblique slope, clearly raised and separated and narrowed towards the apex gradually from the base. Raised central part of petiole rugosely punctured, almost reticulated, its middle indistinctly keeled; the depressed sides with some oblique keels. The middle of the 2nd. segment is irregularly reticulated, the basal half clearly separated, raised and bounded by a stout keel and slightly, gradually narrowed to the apex; the basal keel is small, longer than broad, gradually, roundly narrowed to a fine point at the apex and ending in a stout keel which does not reach to the middle of the segment; the space on either side of the keel is smooth; at the sides of the basal plate are some irregular curved striæ; the 3rd. 4th. and 5th. segments are stoutly, irregularly, closely, longitudinally striated, the 3 furrows being also striated; there is a less distinct, more irregularly, striated furrow on the apex of the 5th. segment.

The abdomen is long-ovate and as long as the head and thorax united; the base of the second segment is almost transverse and keeled; its sides at the base are distinctly depressed and irregularly covered with stout striæ. Scape of antennæ stout, about 3 times longer than wide; the 3rd and 4th joints equal in length.

g. Black, short and broad, basal half of wings black, apical lacteous. The group of *I. trichiosama.*

Iphiaulax pheres, sp. nov.

Black; antennæ nearly twice the length of the body; the wings dark fuscous to the recurrent nervure and, in front, to the base of the 1st. cubital cellule; the rest milky hyaline; stigma pale ochraceous, darker at the base; the apical nervures lacteous; basal two-thirds of hind wings dark fuscous, the rest clear hyaline. ♀.

Length 8; terebra 2 mm.

Hab. Kuching.

Head and thorax smooth and shining; the upper half of orbits with an irregular ochraceous band; the malar space, antennal tubercles and clypeous brownish; mandibles rufo-testaceous, their apex black; palpi black, thickly covered with white pubescence. Front obliquely depressed, furrowed in the centre; ocelli laterally bounded by a deep furrow. Temples wide, not obliquely narrowed, rounded behind; occiput almost transverse. Pronotum with a curved, crenulated furrow before the middle, the part above this being narrowed and separated from the lower. On the centre of the basal half of the metanotum is a keel, bordered by an irregularly foveated furrow, which spreads out obliquely at the apex, the foveæ there being larger and more clearly separated; the apical slope is smooth and shining. Apical abscissa of radius shortly, but distinctly, longer than the basal two united; 2nd. abscissa of cubitus as long as the 3rd.; apical abscissa of cubitus equal in length; recurrent nervure received at the apex of 1st. cubital; transverse basal nervure interstitial. Apical half of 1st. abdominal segment rugosely, coarsely, punctured, the later depressions wide and bearing 2 or 3 irregular keels; 2nd. segment in the centre coarsely, irregularly longitudinally striated-punctured, the sides rugosely, closely punctured and broadly depressed in the middle; thebasal plate smooth and shining, roundly narrowed to the apex; its width at the base more than its length; its keel is stout and reaches to the apex of the segment; the following 3 segments are opaque, closely rugose; their furrows distinct, closely striated. Legs covered with short fuscous hair, the fore tibiæ and tarsi with a pale pile.

The abdomen is slightly longer than the head and thorax united; broad in the middle, narrowed at base and apex, the face is alutaceous; the face is bordered laterally by a wide furrow; basal joint of hind tarsi thickened, not quite as long as the following 2 united; the furrow on the pronotum is continued down the centre of the propleuræ, where it is only crenulated on the top.

Belongs to the group of *I. trichiosoma* Cf. Journ. St. Br. R. A. Soc., 1903, P. 118.

Iphiaulax veneus, sp. nov.

Black; the wings hyaline, the base of both smoky, the stigma and nervures black; the 3rd. abscissa of the radius distinctly longer than the basal 2 united; 3rd. abscissa of cubitus shortly, but distinctly, longer than the 2nd.; recurrent nervure clearly separated from the 1st. transverse cubital nervure; area on 2nd. abdominal segment reaching near to the middle of the segment gradually narrowed to a sharp point; the base smooth, the rest longitudinally closely striated and with the sides sharply margined; 1st. abdominal segment smooth and shining in the centre, the sides and apex rugosely punctured; the depressed edges aciculated outwardly, the apical half deeply depressed. The 2nd., 3rd. and 4th. segments are closely rugosely punctured and irregularly striated; the striæ on the base of the 2nd. run into reticulations; on its basal half, mid-way between the middle and outerside, is a striated shallow, longitudinal furrow; the suturiform articulation deep, closely, strongly striated; the other 2 furrows are not so clearly defined; the apical segments are smooth and shining. The abdomen is ovate, as long as the thorax and distinctly wider than it. Legs closely covered with short pubescence; the hinder more densely than the others; the basal joint of the hind tarsi thickened, as long as the following 2 united.

Face irregularly aciculated; clypeus surrounded by furrows, the upper transverse and narrower than the lateral; 2 short longitudinal keels run into it. Palpi black, covered with white pubescence; the apical 3 joints of maxillary testaceous; mandibles with the basal half rufo-testaceous. Head and median segment covered with black hair ; the middle lobe of mesonotum is covered with shorter pubescence ; it is clearly separated from the lateral lobes by the parapsidal furrows which are deep, clearly defined and reach close to the apex. The apical slope of the metanotum has a distinct curved furrow on either side, with a few irregular ones between.

The wings in this species are lighter coloured than in the others of the group.

h. Black ; head, more or less of thorax, and 2 or 4 front legs red ; wings uniformly dark fuscous. The group of I. shelfordi.

Iphiaulax mobilis, sp. nov.

Black ; the head, thorax, fore legs and the greater part of the middle tibiæ red, wings fuscous, the nervures and stigma black ; basal area of 2nd. abdominal segment longer than its width at the base, opaque closely longitudinally striated, with a smooth, shining space. longer than broad and acutely pointed at the apex, the apex of the 1st. the 2nd. and the 3rd. and 4th. abdominal segments, except broadly on the sides at the base, closely longitudinally striated, the suturiform articulation and the furrow on the base of the 4th. segment crenulated.

Length 16 mm. ; terebra 40 mm.

Hab. Kuching ; April.

Face closely and distinctly punctured ; the middle of the lower half smooth, the smooth part rounded above ; top of clypeus transverse, the sides oblique, upper half smooth, lower-punctured. Front depressed and smooth in the centre and with a longitudinal furrow ; its sides punctured. Temples oblique, rounded. Antennal scape as long as the 2nd. and 3rd. joint united ; its apex on the lower side slightly produced. Middle lobe of mesonotum clearly separated, the furrows reaching to the apex. Basal depression of 1st. abdominal segment and the base of the apical part broadly in the centre smooth, the middle with a longitudinal keel, with some irregular, mostly transverse keels on either side. The centre of 2nd. segment irregularly reticulated more closely on the inner than on the outer side where the keels are much longer and not so much intermixed ; the 3rd. and 4th. segments are closely, regularly striated. The apical half of the sheaths of the ovipositor grey.

Comes close to *I. reticulatus* and *I. patrous* ; it differs from both in the central part of 2nd. abdominal segment not being clearly separated and bounded by keels ; the former may further be known by having the keel on the 1st. abdominal segment, much stouter and dilated upwards at the base, the median segment too being black, the latter species is smaller, the abdomen shorter compared with the thorax, the top of the clypeus is rounded, not transverse, and is more distinctly separated from the face ; the lateral bounding keels are stouter in *patrous*, with the top only oblique.

Iphiaulax reticulatus, Cam.

This species (described Journ. St. Br. R. A. Soc. 1902, p. 105) has been taken at Mount Siban, and Matang, 3200 feet. At any rate I cannot separate the specimens taken at these places from those collected at Kuching. The species varies in size ; the scape of antennæ may be black or red ; the punctuation on the abdomen varies in intensity, and the apex on the sheath of ovipositor may be black or white. The characteristics of the species are the distinct, large fovea on the apex of the metanotum, the stout keel on the 1st. abdomen segment raised at the base, the distinctly raised and separated middle part of 2nd. segment, this part being bordered by a keel and it becomes narrowed towards the apex ; the longish, rounded temples, slightly roundly incised occiput and long narrow antennal scape.

The ♂ is similar ; the punctuation of the abdomen is coarser throughout ; the antennal scape red and middle femora and tibiæ red. In the ♀ the latter may be more or less reddish.

Iphiaulax longitarsis, sp. nov.

Black ; the head, thorax except the greater part of the metanotum, the fore legs and the greater part of the middle femora, red ; the wings fuscous violaceous, the stigma and nervures black ; the basal 2 segments of abdomen longitudinally striated ; the plate on the 2nd. segment smooth, its width the length of its greatest length ; the apex obliquely narrowed ; its keel reaches to near to the apex of the segment, which is there smooth in the middle ; on either side of it is a smooth plate, broadly rounded on the outer side, narrowed to a point on the inner above ; suturiform articulation crenulated except at the sides ; its posterior lateral branch, wide shallow, obscurely striated ; the enclosed part smooth and shining, broader than long, rounded behind. ♀.

Length 10 ; terebra 10 mm.

Hab. Kuching. May.

Scape of antennæ more than twice longer than wide ; the pedicle clearly separated, wider than long. Face flat, smooth ; clypeus not very clearly separated, from it ; broadly rounded above. Temples long, as long as the antennal scape, straight, not obliquely narrowed behind ; occiput transverse. Malar space excavated. First abdominal segment distinctly longer than the second ; its basal depression longer than broad, rounded at the apex ; the striæ irregular, the outer more or less curved. Fore tarsi very long, more than twice the length of the tibiæ. The hair is not very thick on the legs ; the middle coxæ and trochanters fuscous. The abdomen is as long as the length of the head and thorax united. Characteristic of this species are the long front tarsi.

Black ; the head, thorax, antennal scape and fore legs red, the fore legs paler, more yellowish in tint ; wings fuscous, the stigma and nervures black ; face rugose ; 1st. abdominal segment with a stout keel down the middle and with 2 indistinct ones on either sides ; the 2nd. sparsely, irregularly striated ; the basal plate small, longer than broad, obliquely narrowed at the base and apex, its keel stout, reaching to the apex ; suturiform articulation wide, striated, the striæ extending beyond the furrow. Ovipositor densely covered with long black hair. ♀.

Length 8 ; terebra 12 mm.

Hab. Kuching. May.

Scape of antennæ somewhat more than twice longer than broad, the 2nd. joint of equal width, longer than broad ; the 3rd. narrowed at the base, slightly longer than the 4th. Sides of front, distinctly, roundly raised. Temples as long as the antennal scape. Clypeus not clearly separated, rugose. Sides of 2nd. abdominal segment broadly depressed; those of the 3rd. more deeply, especially towards the apex; both depressions are irregularly striated; there is a curved, indistinctly striated furrow on the base of the 4th. segment. The basal 2 joints of the tarsi are fully, together, longer than the tibiæ.

Allied to *I. longitarsis* with which it agrees in having only the basal 2 segments of the abdomen striated; but it may be readily separated by the much longer ovipositor, rugose face and rufous antennal scape.

Iphiaulax pangæus, sp. nov.

Black; scape of antennæ, head, pro- and mesothorax, red; wings uniformly dark fuscous, with black stigma and nervures; the 3rd. abscissa of radius as long as the basal 2 joints united; 2nd. abdominal segment without a distinct basal area.

Length 14-15 mm; terebra 11 mm.

Hab. Kuching. October.

Scape of antennæ short, not quite twice longer than broad; the 3rd. and 4th. joints about equal in length. Temples distinctly, obliquely narrowed, straight, if anything longer than the basal 2 joints of antennæ, united; the occiput transverse; malar space as long as the scape of antennæ. Parapsidal furrows indistinct. Fore tarsi nearly twice the length of tabiæ, the basal 2 joints being as long as them. The central lobe of 1st. abdominal segment irregularly longitudinally striated and with a stout keel down the centre; the 2nd. segment stoutly irregularly striated, without a distinctly defined area at the base or distinct central keel; the basal half of the sides depressed, but not deeply or clearly; basal half of 3rd. segment closely, finely longitudinally striated; the suturiform articulation closely striated; its posterior lateral branch wide, shallow, not clearly defined; the transverse furrow on the 3rd. segment narrow, striated.

The lower half of the face in the centre is bare, smooth: the rest sparsely punctured and with longish black hair; the inner side of the clypeus has an oblique slope, its top with a row of large punctures; not separated by a furrow from the face.

Iphiaulax monticola, sp. nov.

Black, scape of antennæ, thorax, except the sides of the metanotum broadly and the front legs red; the wings dark fuscous, with black nervures and stigma; the basal 3 abdominal segments longitudinally striated; the area on base of 2nd segment closely longitudinally striated, longer than broad, not much narrowed towards the apex; its keel not quite reaching to the apex, bordered by some irregular reticulations, which again are bordered by broadly curved striæ; suturiform articulation crenulated; the furrow on the base of 4th segment is less strongly crenulated. ♀

Length 15 mm.; terebra 13 mm.

Hab. Mount Siban. May.

Scape of antennæ about 4 times longer than wide, as long as the 2nd. and 3rd. joints united. Face, except in the centre, sparsely punctured, its centre depressed, the top of the depression with a small tubercle. The middle of clypeus slightly curved downwards; the sides oblique. Temples slightly oblique, rounded behind, somewhat longer than the antennal scape; occiput not quite transverse. Mesonotum flat. Scutellar furrow narrow, smooth. The raised central part of the 1st. abdominal segment is rugosely punctured at the base; the apical part has a furrow down the middle with some irregular, stout striæ on either side; the basal lateral depression of the 2nd. segment has a stout, oblique keel in the centre, bordered at the base by some curved striæ, those on the outer side being stronger than on the inner; on the base of the 3rd. segment is a smooth, triangular space, bordered, except on the outer side, by crenulated furrows; the centre of the segment is depressed and there is a furrow down the centre. Second abscissa of radius shorter than the 3rd. Fore tibiæ longer than the basal 2 joints of the tarsi united.

Comes near to *I. pangæus*, having, like it, only the basal 3 abdominal segments striated; that species may be known by the temples being more oblique, straight, not rounded; the 2nd. abdominal segment is not closely striated in the centre at the base; the middle is not reticulated and all the striæ are longitudinal, those bordering the keel not being curved.

Iphiaulax quæsitorius, sp. nov.

Black, the head, pro- and mesothorax and scape of antennæ red; the wings fuscous, almost black, the nervures and stigma black; the basal 3 segments of the abdomen strongly, longitudinally striated, the area on base of the 2nd. segment not clearly defined opaque, closely striated; there is an elongated, triangular smooth plate on either side of it; its inner side with a striated narrow band; there is an obscure pale oblique streak on the lower side of the 1st. cubital cellule and a small clear hyaline spot below the 1st. transverse cubital nervure, on the outer side of the recurrent. ♀.

Length 15; terebra 13 mm.

Hab. Kuching. March.

Scape of antennæ fully 3 times longer than wide, longer than the 2nd. and 3rd. joints united; the 3rd. shortly, but distinctly, longer than the 4th. Face sparsely, strongly punctured along the top and sides and sparsely covered with long black hair; the clypeus clearly separated; its top transverse, the side oblique. Malar space twice the length of the 2nd. antennal joint, furrowed in the centre. Temples if anything longer than the antennal scape, not obliquely narrowed, rounded behind; the occiput transverse. Middle lobe of mesonotum not much raised; the furrows indistinct; the apex flat. Median segment covered with longish black hair; the lower part of metapleuræ obscure rufous. The 1st. segment of abdomen longer than the 2nd. broad; its base not much narrower than the apex; the raised central part is longer than broad, its base transverse and clearly separated from the basal depression it is strongly aciculated, irregularly striated in the centre; the depressed outer border smooth, flat and shining. The 2nd. segment has a keel down its centre; the striæ on either side are more curved and irregular: the lateral smooth triangle is bordered on the inner side by a striated furrow; the outer furrow is wide, deep and extends to the base of the apical third; the suturiform articulation deep closely striated, as is also the posterior lateral branch; the enclosed space is smooth and shining; the apical border of the 3rd. segment smooth and shining; there is a distinct crenulated furrow near the base of the 4th. Legs densely pilose. Fore tarsi about twice the length of the tibiæ, the basal 2 joints together as long as them. Sheaths of ovipositor broad, densely pilose. The sides and ventral surface of 1st. abdominal segment white.

Iphiaulax trichiothecus, sp. nov.

Black, the head, thorax, front legs and more or less of the middle legs at the base, red; wings dark fuscous, the nervures and stigma black; the back of the abdomen suffused with brown; tips of sheaths of ovipositor broadly white; they are broad and densely pilose; 2nd. 3rd. and 4th. abdominal segments closely, strongly, longitudinally striated; the area on 2nd segment fully twice longer than its width at the base; it becomes gradually narrowed to a fine point; its base rounded, smooth, irregularly, closely longitudinally striated; there is a smooth plate, broad at the base, narrowed towards the apex on either side of it; its keel is narrow, irregular and reaches to the apex of the segment; the space on either side of it is irregularly reticulated; the sides depressed, closely obliquely striated; suturiform articulation deep, crenulated; the furrow on the 3rd. segment is more irregular and is irregularly striated; there is a smooth, curved furrow on the base of the 4th. segment. ♀.

Length 9 mm.; terebra 16 mm.

Hab. Kuching. April and May.

The 1st. abdominal segment is longer than the 2nd.; it is smooth, except the apical third in the centre; that is raised, keeled on the sides, the keels extending to the middle of the segment; there is a shorter keel in the centre; and there are a few irregular transverse striæ. Scape of antennæ about 4 times longer than wide, the 3rd. joint slightly longer than the 4th. Face closely, distinctly punctured except in the middle; clypeus punctured, depressed broadly in the middle; Malar space longer than the antennal scape, depressed down the centre. Mandibles rufous black at apex; the palpi of a paler rufous colour. Parapsidal furrows deep, clearly defined. Legs densely pilose; the fore tarsi more than double the length of the tibiæ, their basal 2 joints being equal in length to them. Temples not quite the length of antennal scape rounded and slightly narrowed.

Iphiaulax abgarus, sp. nov.

Black; head, pro- mesothorax, the greater part of middle femora and the front legs; the metapleuræ, and the scape of antennæ below, red; wings dark fuscous-violaceous, the nervures and stigma black; apical half of 1st. abdominal segment finely, the 2nd. more strongly longitudinally striated; the plate on the base of latter does not reach to the middle; it is longer than its width at the base, becomes gradually narrowed to a point, the base smooth, the rest closely, finely striated. ♀.

Length 12: terebra 12-13 mm

Hab. Kuching. May.

Scape of antennæ and pedicle marked with red below; the scape about twice longer than wide. Face and clypeus smooth and shining, sparsely haired, the clypeus not clearly separated from the face. Temples longer than the antennal scape; occiput transverse. Parapsidal furrows deep, clearly defined; the middle lobe of mesonotum not raised. Suturiform articulation wide, strongly striated; its posterior furrow is curved and striated; the sides of the 3rd. segment are coarsely aciculated; there is a narrow, almost smooth furrow, which curves roundly backwards on the 4th. segments; on the ventral surface are three pairs of large black spots. Legs thickly covered with long hair.

Comes close to *I. syleus* but that may be known from it by the much longer antennal scape, it being three times longer than wide.

Iphiaulax tristator, sp. nov.

Black; the head and thorax red, the metanotum infuscated; the fore legs red; the apex of middle femora and base of tibiæ broadly of a darker red; wings dark fuscous, the nervures and stigma black, scape of antennæ dark rufous below; the basal five abdominal segments striated. ♀.

Length 12-13 mm.

Hab. Kuching.

Scape of antennæ short and thick, not much more than twice longer than wide. Face smooth in the centre, an elongated fovea in its centre above ; the sides punctured. Clypeus short, obliquely sloped, its top rounded. Temples obliquely narrowed, straight, as long as the antennal scape ; occiput slightly, roundly incised. Parapsidal furrows obsolete. First abdominal segment distinctly longer than the 2nd., its length nearly twice the width at the apex ; the basal half of the centre with a stout central keel ; the sides and apical half stoutly, irregularly reticulated ; the lateral furrows stoutly, irregularly transversely striated ; the 2nd. segment stoutly irregularly reticulated, the striæ in the centre more irregular, broken and widely separated ; there is no basal area, but a distinct keel runs to the apex. The suturiform articulation deep, narrow, crenulated ; the lateral apical branch, wide, striated like the rest of the segment ; there is a distinct crenulated furrow on the base of the 4th. and 5th. segments.

Iphiaulax pampatensis, sp. nov.

Black, the pro- and mesothorax dark red ; the front, except in the centre above, the face, clypeus, lower two-thirds of outer orbits, base of mandibles and palpi, yellowish-testaceous ; fore-legs fuscous-testaceous, the middle coxæ, trochanters and femora darker yellowish-testaceous ; their tibiæ and tarsi almost black ; wings fuscous, highly iridescent, the stigma testaceous, darker in front ; 3rd. abscissa of radius longer than the basal two united. ♂.

Length 11-12 mm.

Hab. Pampat. May.

Scape testaceous below, pilose ; about 3 times longer than thick. Front and vertex smooth and shining, the front not much depressed, the ocelli surrounded by furrows which run into the frontal one. Face closely punctured, covered with long fuscous hair ; clypeus surrounded by a rounded furrow. Eyes large, projecting, broader below than above ; malar space small not much more than the length of the 2nd. antennal joint. Temples as long as the antennal scape, rounded, slightly obliquely narrowed ; occiput transverse. First abdominal segment narrow, longer than the second, aciculated ; the apex roundly convex, very smooth and shining ; the second closely, irregularly longitudinally striated ; the base roundly narrowed ; there is no area, but the centre at the extreme base is smooth and shining, the apex of the segment being also smooth ; the third segment is similarly formed, the basal half in the centre being roundly raised, the raised part being more rounded and more clearly separated than it is on the 2nd. Suturiform articulation narrow indistinct, striated ; the furrow on the base of the 4th. segment is wider and more distinct, the striation being also stronger ; it is continued down the sides, (but this part is not striated) obliquely at the base, more curved at the apex, to near the apical fourth of the segment. The abdomen is long and narrow, more than twice the length of the thorax, of equal width throughout. Antennæ longer than the body.

Iphiaulax leptogaster, sp. nov.

Black ; head, thorax, except the metanotum and the 4 front legs, red ; wings fuscous-violaceous, the nervures and stigma black ; the basal 2 segments of the abdomen twice longer than broad of equal length and longer than any of the others ; the 1st. irregularly rugose ; the area on the 2nd. an equilateral triangle, its base the width of the segment, its apex ending in a keel which reaches to the middle of the segment ; it is stoutly irregularly striated ; from either side of the base a keel runs obliquely to near the apex ; inside it are some broken irregular keels, mostly oblique ; outside it particularly on the base and apex, are some irregular broken keels ; the 3rd. segment bears short stout broken keels to near the apex ; the 4th. and 5th. to shortly beyond the middle, the reticulated part being narrowed and rounded at the apex,

Metanotum and basal segments of abdomen sparsely covered with long blackish hair ; antennæ longer than the body ; the scape about 3 times longer than wide ; temples rounded, not obliquely narrowed ; legs densely pilose ; abdomen narrow, twice the length of the head and thorax united. Parapsidal furrows indistinct. Length 13 mm. ♂.

Characteristic of this species is the long narrow abdomen with the large triangular plate on the base of the 2nd. segment and the irregularly reticulated segments.

Hab. Kuching. March.

i. As in h. but with the apex of the antennæ broadly white.

Iphiaulax ornaticornis, sp. nov.

Head and thorax red; the antennæ, except the scape which is rufous, and the apical 13 joints which are white; abdomen and the 4 hind legs, black; the front legs rufo-testaceous; the middle legs fuscous; wings fuscous, the nervures and stigma black; 1st. abdominal segment with some stout, irregular curved striæ; the area on 2nd segment reaches beyond the middle where its keels unite; its base is irregularly striated; its apical two-thirds are bordered by short, stout, curved keels; outside these closely, stoutly, longitudinally striated to near the apex; the depressed middle of the lateral region smooth for the greater part; suturiform articulation wide, deep and crenulated; 3rd segment closely, longitudinally striated; the middle of the sides smooth; the base stoutly striated; the furrow on the apex is distinct and crenulated; the extreme apex of the segment and the whole of the following smooth, except that there is a crenulated furrow on the 4th. ♀.

Length 11-16 mm.; terebra 24 mm.

Hab. Kuching. May.

Scape of antennæ fully 3 times longer than wide narrowed at the base, the apex produced below; 2nd. joint larger than usual; the 3rd. distinctly longer than the 4th. its base dilated Face and clypeus rugosely punctured; malar space small, not much longer than the 2nd antennal joint. Temples as long as antennal scape, occiput transverse. Parapsidal furrows indistinct. Hind legs long and slender; their femora more or less fuscous; the tarsi distinctly longer than the tarsi; middle tarsi longer compared with their tibiæ.

A distinct, well-marked species easily separated by the white apex of antennæ, long slender legs with all the tarsi clearly longer than their tibiæ and short malar space and by the basal 3 abdominal segments being striated. It appears to vary considerably in size.

Chaolta trituberculata, sp. nov.

Luteous, antennæ and a curved mark across the ocelli, black; wings fuscous, yellowish-hyaline to near the transverse basal and to the transverse median nervures; 2nd abdominal segment at the base tuberculate in the middle and at the sides; its area reaching to the middle of the segment; closely striated and becoming gradually narrowed to a sharp point. ♀

Length 11-12 mm.; terebra 9 mm.

Hab. Kuching. April.

Antennæ shorter than the body; its scape stout, about 3 times longer than broad, not hollowed below; its apex with a hollow, broadly bordered, longer than broad and rounded at the apex. Face irregularly punctured: below the antennæ is a plate, broader than long, with raised edges; a stout keel runs into it from between the antennæ. Temples broad, rounded behind; occiput transverse. Mesonotum, scutellum and metanotum on one level, flat; the parapsidal furrows obsolete; scutellum depressed, becoming roundly narrowed towards the apex. Central area of 1st abdominal segment strongly, closely longitudinally striated; of almost equal width throughout; the lateral depressions finely striated on the inner side; 2nd to 5th segments closely longitudinally striated, the striæ becoming weaker gradually; the 2nd, 3rd and 4th segments with strong oblique depressions on the base at the sides; the 2nd segment outside the furrow is irregularly striated; the striæ more or less curved. The abdomen is distinctly wider than the thorax and is not much longer than it. The 3rd abscissa of the radius is as long as the basal 2 united. The base of the stigma is ochraceous; there is a curved hyaline cloud, dilated above, on the lower side of the 1st cubital cellule and one along the outer side of the recurrent nervure. Legs short and stout; tarsal joints spinose at the apex; calcaria minute. Hypopygium largely projecting; fore tibiæ as long as the basal 2 joints of the tarsi.

The 1st abdominal segment rises sharply, obliquely from the base to the apex, forming a distinct angle with the 2nd; the black mark on the vertex extends laterally to the eyes and becomes gradually narrowed to the middle behind.

Comes close to *C. lutea*; that species may be known by the immaculate front, longer ovipositor and yellow scape of antennæ

Chaolta sulcata, sp. nov.

Length 9; terebra 5-6 mm.

Hab. Kuching. July.

This species is very similar to *C. 3-tuberculata* and has, like it, the base of 2nd abdominal segment trituberculated; it is smaller and more slenderly built; has the facial plate smaller, and not raised along the apex; the scutellum is not flat and hollowed and on a level with the mesonotum, but is raised above it and the metanotum, it being slightly, but distinctly, convex; and the mesopleuræ have a distinct longitudinal furrow below; it being wider, deeper at the base, where it borders the mesosternum; the 2nd abdominal segment is smaller compared with the 3rd and the ovipositor is shorter. The furrow running from the metathoracic furrows is wide and deep; the centre of the metanotum is finely closely longitudinally striated; the top and inner side of the 1st cubital cellule are broadly hyaline and there is a small hyaline spot, longer than broad, in front of the upper side of the recurrent nervure; the lateral furrows on the sides of the 2nd, 3rd and 4th segments are distinct; the suturiform articulation is narrower than it is in *3-tuberculata*. The pleuræ, sternum and legs are covered with long white pubescence.

Chaolta maculifrons, sp. nov.

Length 9; terebra 8 mm. ♀.

Hab. Kuching. April.

Agrees closely with *C. trituberculata*, having, like it, the base of the 2nd abdominal segment trituberculate, but not so strongly; the front is black except in the centre; the black mark extends to the eyes, is continued behind them all over and, in the middle, is triangularly produced half-way on to the vertex; and the metanotum and back of abdomen are marked with black.

Antennæ black; the scape not quite 3 times longer than broad, the apex toothed at the sides below. Face with a clearly defined semicircular depression over the mouth; covered with pale hair. Front and vertex smooth and shining; the temples broad, not much narrowed, rounded behind; the occiput transverse. Frontal plate smooth, longer than the width at the base; the apex rounded; but not broadly, a furrow leads in to it from between the base of the antennæ, in the centre of which is a keel, which reaches close to the apex of the plate, becoming thicker as it does so. Mesonotum, scutellum and metanotum flat, on one level; scutellum roundly narrowed to the apex. Metanotum and mesosternum blackish. Middle lobe of 1st abdominal segment of equal width; stoutly longitudinally striated, the inner side of the sides more finely and closely striated; the 2nd to 4th segments closely rugosely punctured and striated; the keel on the 2nd segment reaches to the base of the apical fourth; it becomes gradually narrowed to a fine point, is closely longitudinally striated and is bordered laterally by a crenulated furrow; the oblique furrows on the 2nd, 3rd and 4th segments are straight, oblique and stoutly striated; the suturiform articulation is crenulated; the 2nd furrow is deep narrow and smooth. Wings yellowish hyaline to near the transverse basal and to the transverse median nervures; the 1st cubital cellule has a hyaline cloud which bifurcates near the middle, the lower branch being the longer, reaching to the apex of the cellule, below which is a smaller cloud projecting backwards from it; the 3rd abscissa of the radius is as long as the basal two united. Fore tarsi twice the length of tibiæ which are hardly the length of the basal two joints united.

A new species of Chalcis from Borneo.

By P. CAMERON.

Chalcis borneanus, sp. nov.

Black; the under side of the scape, the apices of the femora, the base and apex of the tibiæ, the tarsi and the tegalæ whitish-yellow; the hinder femora red, their middle teeth longish and clearly separated; the apex of the scutellum ending in 2 stout, longer than broad, teeth; the wings hyaline, the nervures black. ♀

Length 4½ mm.

Hab. Borneo.

Antennæ stout, as long as the thorax; the 3rd joint distinctly longer than the 4th and narrowed at the base. Head closely, but not deeply, punctured, except in the centre of the front; the centre of the face shining and less strongly and closely punctured; the top of the clypeus shining and bearing 6 large foveæ. Mandibles rufous behind the teeth. Pro- and mesothorax rather strongly and closely punctured; the pronotum at the base on the sides with a distinct keel. Parapsidal furrows wide, curved. Scutellem more widely punctured than the mesonotum, its apex ending in 2 large, bluntly, rounded, longer than broad, finely rugose teeth. Metanotum irregularly reticulated; the central basal area is larger and longer, is obliquely narrowed at the base and becomes narrowed slightly towards the apex. Propleuræ rugose; the meso- smooth and shining and with some widly separated striæ at the base. Metapleuræ closely reticulated, abdomen shorter than the thorax, blunty pointed and covered with white pubescence at the apex.

Chinese Names of Streets and Places in Singapore and the Malay Peninsula.

By H. W. Firmstone.

In two previous Journals lists of the Chinese names of streets in Singapore and in Penang have been published by Mr. Haughton and Lo Man Yuk (XXIII and .)

Mr. Firmstone continues and adds to this work the following Chinese names and translations.

I.—Chinese names of

English.	Hokkien.	Cantonese.
1. Albert Street ...	(i) Bo moa^{n}-iu koi ...	Mo ma-yau kai ...
	(ii) Mang-ku-lu seng-ong-kong.	...
2. Almeida Street ..	Gu-chhia-chui hi-hng au.	Ngau-chhe-shui hei-yün hau kai.
3. Amoy Street ...	(i) Ma-cho-kiong au ...	...
	...	(ii) Kun-yam miu hau kai.
	(iii) Gi-oh khau ...	...
		(iv) Ha mun kai ...
4. Angus Street ...	Kam-kong Ma-lak-kah neng-chhun hi-hng tui-bin koi.	...

Streets in Singapore.

Chinese Characters.	Remarks as to Meaning.
磨蔴油街	(i) 'Grind oil of sesamum street': *i.e.* the street where oil is expressed from Sesamum.
望八魯聖王公	(ii) 'Bencoolen joss': *i.e.* the street of the Bencoolen street district joss.
牛車水戲園後街	'Behind the Bullock-cart-water theatre' *i.e.* the street behind the Chinese theatre in Kreta Ayer. (of Smith street and Sago street).
媽祖宮後	(i) 'Behind the temple of Ma-cho'.
觀音廟後街	(ii) 'The street behind the temple of Kun-Yam'. (The same temple is used for the worship both of the godddess Ma-cho, and of the goddess Kun-yam.)
義學口	(iii) 'Free school mouth' *i.e.* in front of the Free school, there being a Chinese School in Amoy street.
厦門街	(iv) 'Amoy street'. ('Ha-mun' is the Cantonese pronunciation of the characters representing the name of the place Amoy).
監公嘛呔呷恒春 戲園對面街	'Kampong Malacca chop 'Heng Chhun' theatre opposite street' *i.e.* the street in Kampong Malacca opposite the theatre of chop 'Heng Chhun'.) (Angus street is one of a dozen or more streets in the

English.	Hokkien.	Cantonese.
5. Ann Siang Hill ...	Chui-lan teng ...	Sui-lan theng ...
6. Annamallai Chitty lane.	(i) Tek-kha Khut-thau hang.	(i) Chuk-keuk kwat-thau hong.
	(ii) Tek-kha tng-tiam tui-bin te-sa^{n}-tiau.	(ii) Chuk-keuk tong-pho tui-min tai-sam-thiu.
7. Anson Road ...	(i) Lau toa-peh-kong hit-tiau.	...
	(ii) Ti ku pa-sat khi Tan-jong Pa-kat hai-ki^{n} hit-tion.	...

Chinese Characters	Remarks as to Meaning.
	Kampong Malacca district and no Chinaman would think of giving the name quoted, but would be content with the indefinite expression ‘Kam-kong Malak-kah .’ The neighbourhood contains but few Cantonese, and they would use ‘Kam-pong Ma-lak-kah.’
萃蘭亭	‘The ‘chui-lan’ pavilion’. (There used to be a club on this hill, known by this name).
竹脚掘頭巷	(i) ‘The cul-de-sac in ‘Tek Kha’.’ (Tek Kha’ means ‘foot of the bamboos’ and is the universal name for all the Selegie Road neighbourhood).
竹脚當店對面第三條	(ii) ‘The third (street) opposite the ‘Tek-kha’ pawnshop.’ (There is a pawnshop in Selegie Road, and opposite it three narrow lanes lead off, viz. Veerappa Chetty lane, Nagapa lane, and this one.)
老伯公那條	(i) ‘Old idol street.’ (There is an old temple at Tanjong Pagar.)
自舊巴虱去丹戎巴葛海墘那條	(ii) ‘From the old market going to Tanjong Pagar (along) the shore, that street’. These names are such as may be used by Hokkiens. I can find no Cantonese name. Far a great part of the road

English.	Hokkien.	Cantonese
8. Arab Street ...	(i) Jiau-a koi ...	(ii) Yau-wa kai ...
9. Armenian Street ...	Seng Po toa chhu au...	Seng Po tai ok hau-pin.
10. Bain Court ...	(i) Chui-sien-mng be-liau hang-a lai.	...
	...	(ii) Shui-sin-mun ma-fong kwat-thau hong.
11. Bain Street ...	(l) Hok-im-kuan au koi.	(i) Fuk-yam-kwan hau-kai.
	(ii) Sek-a-ni le-pai-tng tui-bin hang.	...

Chinese Characters.	Remarks as to Meaning.
	there are no houses and that accounts for the fact that there is no Chinese name as yet crystallised for the road.)
爪亞街 休華街	'Javanese street.' (Many Javanese live here, and the Chinese have distinguished them as the chief inhabitants of the street.)
成寶大厝後	'Behind Seng Po's big house'. (Sing Po, *i.e.* Tan Seng Po, a wealthy Chinaman, is now dead.)
水仙門馬寮巷仔內	(i) 'Water-fairy-gate stables lane within.'
水仙門馬房掘頭巷	(ii) 'Water-fairy-gate stables cul-de-sac.' (Bain Court is a lane off North Bridge Road. That part of North Bridge Road is called 'the Water-fairy-gate', why I cannot say, unless it is connected in any way with the fact that there was once a public bath in the vicinity. Douglas' Amoy Dictionary gives 'chui sien mng' 'gangway' but I know of no reason why this part of Singapore should be socalled.
福音館後街	(i) 'Street behind the Gospel-house.'
色仔年禮拜堂對面巷	(ii) 'Eurasian Church opposite lane.' ((ii) applies also to Holloway Lane).

English.	Hokkien.	Cantonese
12. Balestier Road ...	(i) O Kio.	...
	...	(ii) Wu-hap thong ...
	(iii) Go-cho toa-peh-keng.	...
13. Bali Lane ...	(i) Sin Ba-li.	...
	...	(ii) Ma-li hong.
14. Banda Street ...	...	Fan-tsai mei.
15. Battery Road ...	(i) Tho-kho au ...	...
	...	(ii) Dho-fu fa-yün pin.

Chinese Characters.	Remarks as to Meaning.
烏橋	(i) 'Black Bridge.'
芋葉塘	(ii) 'Taro Pond.'
	(ii) this name is also given to Delta Road (ii) there are fields planted with this vegetable in the Balestier Road neighbourhood.
鵝曹大伯公	(iii) 'Rochore Temple.'
新峇厘	(i) 'New Bali.'
馬厘巷	(ii) 'Bali Lane.'
	(i) New Bali, to distinguish the lane from Shaikh Madaesah Lane or 'Old Bali' adjoining.)
番寨尾	End of the foreign brothels. ('Foreign' here means 'frequented by non-Chinese.' There is nothing but a roundabout way of expressing this Street in Hokkien ; cf. Spring Street.)
土庫後	(i) 'Behind the godowns.'
土庫花園邊	(ii) 'Beside the garden (near the) godowns. (There is no definite name. A Chinaman would undoubtedly have to go into further detail to distinguish Battery Road from adjoining Streets).

English.	Hokkien.	Cantonese.
16. Beach Lane. ...	Thih pa-sat khut-thau hang.	Thit pa-sat kwat-thau hang.
17. Beach Road. ...	(i) Sio-po hai-ki^{n}.	...
	...	(ii) Kam-pong hoi-pin.
	(iii) Thih pa-sat khau.	(iii) Thit pa-sat hau ...
	...	(iv) Sha-tsui hung-mo thit-chhong tui-min.
	(v) Bang heng bi-kau.	(v) Man heng mai-kau.
	...	(vi) Hoi-nam wui-kwun hoi-pin kai.

Chinese Characters.	Remarks as to meaning.
鐵巴虱掘頭巷	‘The iron market cul-de-sac.’ (The iron market is the market built of iron, *i.e.* Clyde Terrace Market).
小坡海墘	(i) ‘Small-town sea shore.’ (‘Sio-po’ is ‘small town’ i. e. that part of Singapore to the north of the Stamford Road Canal, as opposed to ‘toa-po’ or big town, the Singapore river end of the town.)
金榜海邊	(ii) ‘ ‘Kampong’ sea shore.’ (Kampong means Kampong Glam, and is practically the Cantonese equivalent for ‘sio-po.’)
鐵巴虱口	(iii) ‘ Iron market ’ i. e. the street to which the iron market opens or faces (see Beach Lane).
沙嘴紅毛鐵廠對面	(iv) ‘ Tanjong Rhu European foundry opposite.’ (This would seem to be a roundabout way of describing Beach Road, and would probably only be used as explanatory of (ii) (but I heard it used).
萬興米郊	(v) ‘Chop ‘Ban Heng’ rice-mill.’
海南會館海邊街	(vi) ‘The street along the shore near the Hailam kongsi-house.

English.	Hokkien.	Cantonese.
	(vii) Ji-chap keng ...	(vii) Yi-shap kan. ...
18. Belilios Road. ...	Phau-be po hang ...	Phau-ma po hong ...
19. Bencoolen Street...	(i) Chhai-tng au.	(ii) Chai-thong hau.
	(ii) Mang-ku-lu toa lo.	...
	...	(iii) Mong-kwo-lo.
20. Ben Hoon Road ...	Chin-long lai.	Chau-long roi.

Chinese Characters.	Remarks as to meaning.
間十二	(vii) 'Twenty buildings.' (This name is more generally given to Jalan Sultan, but the twenty houses in question were in Beach Road! This is only characteristic.)
巷坡馬跑	'Race Course Lane.' (There is no other name for this and half a dozen other streets leading from Serangoon Road towards the Race Course.)
後堂菜 後堂齋	(i) and (ii) Behind the Vegetarians' hall.' (There is a meeting house of a Chinese Vegetarian guild here.)
路大魯久望	(ii) ' 'Bencoolen' big street.'
路菓芒	(iii) 'Bencoolen.' (A number of streets in this neighbourhood are spoken of as 'Bencoolen' by all classes of Chinese. It is usually exceedingly difficult to ascertain which street is meant).
內廊酒	'Within the spirit depôt (district).' (There was formerly a factory of Chinese spirit near where this road now lies. It is disused now. Cf. Cheang Hong Lim Lane, where there is also a disused spirit-factory.)

English.	Hokkien.	Cantonese.
21. Bernam Street ...	Tan-jong pa-kat chin-seng shaⁿ khau.	Tan-yong pa-kat chan-seng shan hau.
22. Bernard Street ...	Go-cho lut bo-bue hang.	Lo-cho lut mo-mei hong.
23. Birch Road. ...	Phau-be po hang ...	Phau-ma po hong ...
24. Blanco Court ...	Gu-long lai ...	...
25. Boat Quay. ...	(i) Tiam-pang lo-thau	...

Chinese Characters.	Remarks as to Meaning.
丹戎巴葛振成山口	'Tanjong Pagar Chin Seng Hill mouth' *i.e.* the road on to which Chin Seng Hill opens (or faces) at Tanjong Pagar. (I do not suppose that this name would help one much to locate the street in speaking to a Chinaman, but there are no names for this or many other of the numerous new streets off Tanjong Pagar Road. However I was given this description as applicable to Bernam Street among others. 'Chin-Seng Hill' is what is usually called 'Bukit Kim Cheng.')
鵝槽律無尾巷	'Rochore Road no end lane.' (This is a small blind alley off Rochore Road.)
跑馬坡巷	'Race Course Lane.' (See Belilios Road).
牛壠內	'Within the godowns (quarter).' ('Gu-lang' is not Chinese, but is simply 'godown' pronounced in Hokkien fashion. I do not know why such a name is specified for such an insignificant street as Blanco Court.)
墊邦路頭	(i) 'Sampan ghaut or landing-place.' (This applies to the lower part of Boat Quay near Purvis Creek.)

English.	Hokkien.	Cantonese.
	(ii) Chap-sa^{n} kang ...	(ii) Shap-sam hong ...
	(iii) Khe-ki^{n} ...	...
	(iv) Chap-peh keng ...	(iv) Shap-pat kan ...
	(v) Chui-chhu bue ...	...
26. Bonham Street. ...	Tuan Kat tho-kho au-bue ...	Tun kat tho-fu hau-mei.
27. Bras Basah Road...	(i) Lau kha-khu-keng khau.	...
	...	(ii) Kau ka-ku hau ...
	(iii) Ho-lan-se le-pai-tng pi^{n} ...	(iii) Fat-lan-sai lai-pai-thong pin.
	(iv) Hai-ki^{n} ang-neo toa-oh pi^{n} ...	...
	...	(v) Tai shü-kwun-fong pin.
28. Buffalo Road ...	Kam-kong ka-la-bu phau-be po hang ...	Phau-ma po hang ...

Chinese Characters.	Remarks as to Meaning.
十三行	(ii) 'Thirteen shops,' *i. e.* the part near where Canton Street joins it.
溪墘	(iii) 'River-side.'
十八間	(iv) 'Eighteen houses,' *i. e.* the part near Circular Road.
水厝尾	(v) 'Bathing-house end.' (This name is little used: it belongs to the Canton Street part.)
綏葛土庫後尾	'At the back of Mr. Katz' godown' *i. e.* behind Katz Brothers' Shop.
老脚拘間口	(i) & (ii) 'Old Gaol Mouth.' (The old gaol was between Stamford Road and Bras Basah Road. 'Kha-khu' means 'fetters' in Hokkien. The Cantonese is adapted.)
舊架古口	
和蘭西禮拜堂邊	(iii) 'Beside the French Church.'
海墘紅毛大學邊	(iv) 'Beside the seaside English big school' (*i. e.* Raffles Institute).
大書舘旁邊	(v) 'Beside the big school.'
監公加勝武跑馬埔巷	'Kampong (for Kandang) Kerbau Race-course Lane.'

English.	Hokkien.	Cantonese.
29. Buggis Street	Peh sua-pu	...
30 Bukit Timah Road.	(i) Tek-kha kang-a ki^{n}	...
	...	(ii) Tek-kha chhung pin.
31. Canal Road	(i) Kam-kong Ma-lakkah kang-a ki^{n}.	...
	(ii) Pik-ki-lin au	(ii) Pak-khi-lun hau-(pin kai).
	(iii) Kong chioh-a	...
	(iv) Pun-so chhia	...
32. Cantonment Road.	Pa-so bue	Pa-so mei

Chinese Characters.	Remarks as to Meaning.
白沙浮	‘White-wash’ (?) (Sua-pu is said to be the Malay ‘sapu;’ but no information is forthcoming as to the reason for the name, which I suppose be due to the houses there being once given an extra coat of whitewash).
竹脚港仔墘	(i) & (ii) ‘The side of the stream in the Tek-kha (or Selegie Road) district.’
竹脚涌邊	(This only refers to the lower end of the Bukit Timah Road. The Wayang Satu and Bukit Timah village parts are differently called; see under the country districts.)
監公馬六甲港仔墘	(i) ‘Beside the Kampong Malacca Stream. (This name is practically obsolete.)
畢麒麟後	(ii) ‘The street behind the ‘Pickering’ (office)’ *i. e.* the Chinese Protectorate.
貢石仔	(iii) ‘Stone breaking.’ (This is the general name for Havelock Road, but the name is also applied to Canal Road.)
糞掃車	(iv) ‘Refuse sweeping carts.’ (Municipal refuse carts are stationed here.
巴梭尾	‘End of (Bukit) Pasoh.’

English.	Hokkien.	Cantonese.
33. Canton Street ...	(i) Khai ki^{n} hue^{n}-koi-a.	...
	...	(ii) Shap-sam hong wang kai-tsai.
34. Carine Street ...	(i) Go-cho lut bo-bue hang.	...
	...	(ii) Lo-cho kwat-thau hong.
35. Carpenter Street...	(i) Hi-kuan koi ...	...
	(ii) Gi-hok koi ...	(ii) Yi-fuk kai ...
36. Cashin Street ...	(i) Hok-im-kuan au hue^{n}-hang.	(i) Fuk-yam-kwun hau-pin wang-hong.
	(ii) Ka-seng koi ...	...
37. Cavenagh Road ...	Toa-ong-sua^{n} au koi ...	Tai-wong-shan hau kai.
38. Cecil Road ...	(i) A-phien kongsi ...	...

Chinese Characters.	Remarks as to Meaning.
溪墘橫街仔	(i) & (ii) ‘Small cross street by Boat Quay.’
十三行橫街仔	
鵝槽律無尾巷	(i) & (ii) ‘Cul-de-sac near Rochore (Road).’ (cf. Bernard Street.)
鵝槽掘頭巷	
戲館街	(i) ‘Theatre Street.’ (The first Tiechiu theatre was in this street.)
義福街	(ii) ‘‘Gi-hok’ Street.’ (The old ‘Gi-hok’ society had a Kongsi-house here: cf. Clarke street.)
福音館後橫巷	(i) ‘The cross street behind the Gospel-house.’
嘉興街	(ii) (This is phonetic for ‘Cashin.’)
大王山後街	‘The street behind the Governor's hill.’ (I do not think there is any fixed name for Cavenagh Road, but this was given to me to indicate it.)
鴉片公司	(i) ‘Opium-Kongsi.’ (The headquarters of the Opium Farm have

English.	Hokkien.	Cantonese.
	...	(ii) Si-shü kai ...
	(iii) Lau pa-sat ma-ta-chhu au.	...
39. Cheang Hong Lim Lane.	Kong chioh-a chiu-long lai.	Chau-long noi ...
40. Cheang Hong Lim Street.	Peh keng-a	...
41. Cheang Lim Hien Street.	Kong chioh-a chiu-long lai.	Chau-long noi ...
42. Cheang Wan Seng Road.	Chiu-long pi^{n} ...	Chau-long pin ...
43. Cheng Cheok Street.	Gu-kak hang ...	Ngau-kok hong ...

Chinese Characters.	Remarks as to Meaning.
	been in this street for the past 2½ years.)
街書詩	(ii) Phonetic (Si-shü for Cecil.)
後厝打馬虱吧老	(iii) 'Behind the Police Station near the old market.'
內廍酒仔石貢	'Stone-breaking spirit-depôt within' *i.e.* 'within spirit-depôt (quarter) in the Havelock Road neighbourhood.' (All lower Havelock Road and district is called "Stone-breaking (place)." There is a disused spirit factory in Cheang Chong Lim Lane which leads off Havelock Road. Cf: Beng Hoon Road.)
仔間八	'Eight small buildings.' (This is a very short street, so the name is not altogether inappropriate.)
內廍酒仔石貢	(See under Cheang Hong Lim Lane.)
邊廍酒	'Beside the spirit-depôt' (cf. Beng Hoon Road.)
巷角牛	Ox-horn lane': so called because the street runs in a semicircle, more or less, from Tanjong Pagar Road back

English.	Hokkien.	Cantonese.
44. China Street ...	(i) Kiau-keng khau ...	...
	...	(ii) Po-tsz-chheung kai
	(iii) Gi-hin kong-si ...	...
45. Chinchew Street...	Tau-hu koi ...	Tau-fu kai ...
46. Chin Hin Street...	(i) Toa-po sim koi-a ...	...
	...	(ii) Chhiu-chau san kai.
	(iii) Sin pa-sat sin koi..	...

Chinese Characters.	Remarks as to Meaning.
	again to Tanjong Pagar Road, forming a cresent or pair of ox-horns.
賭間口	(i) 'Gambling houses' mouth. *i.e.* the street on to which the gambling houses open.
寶字場街	(ii) 'Gambling-hall street.'
義興公司	(iii) 'Gi-Hin Kongsi house.' (There was formerly a Kongsi-house of the old Gi-Hin Society here.)
荳腐街	'Bean-curd street.'
大坡新街仔	(i) 'Big town new little street.' ('Big town' is distinguished from 'small town,' which is across the Stamford Road canal; see under Beach Road. It is necessary to add the 'Big town' here, because there is another 'New Street'—Fraser Street—in 'small town.'
潮州新街	(ii) 'Tiechiu new street.' (The district is largely inhabited by Tiechius, but the street itself is a Cantonese brothel street.)
新巴虱新街	(iii) 'New market new street.' ('New market' is the Ellenborough Market close by.)

English.	Hokkien.	Cantonese.
47. Chin Swee Road...	(i) Kong chioh-a chiu-long lai.	Chau-long noi ...
...	(ii) Chin-sui koi ...	Chan-sui kai ...
...	(iii) Siok- ui sua^{n} teng.	...
48. Chhoa Lam Street.	Siok-ui sua^{n} teng ...	...
49. Church Street ...	Go-tai thien kiong ...	Ng-toi thin kong ...
50. Circular Road ...	(i) Chap-sa^{n} hang au ...	(i) Shap-sam hong hau.
	(ii) Chap-peh keng au.	(ii) Shap-pat kan hau.
51. Clarke Street ...	(i) Gi-hok kong-si au...	...
		(ii) San yi-fuk kong-si hau-pin ...

Chinese Characters.	Remarks as to Meaning.
貢石仔酒廊內	(i) (See under Cheang Hong Lim Lane).
振瑞街	(ii) (This is an adaptation, meaning simply Chin-swee Road—it is not commonly used excpt by Babas.)
淑惠山頂	(ii) 'Siok Wee's plantation.' (The land about here belonged to Kiong Siok Wee.)
淑惠山頂	(See under Chin Swee Road above.)
五代天宮	'Heavenly palace of the five generations. ('Thien kiong' Heavenly palace is an abbreviation for 'thien hok kiong' *i.e.* palace of heavenly bliss; there is a temple of this name in this street, in which five josses of different se^{n} or clan-names are enshrined.)
十三行後	(i) 'Behind the thirteen shops'.
十八間後	(ii) 'Behind the eighteen buildings'. (Cf. Boat Quay).
義福公司後	(i) 'Behind the Gi-hok Kongsi (house).'
新義福公司後便	(ii) 'Behind the New Gi-hok Kongsi (house) Cf. Carpenter street. The new Gi-hok Kongsi house was near here.)

English.	Hokkien.	Cantonese.
52. Clive Street	Kam-kong ka-poh	Kam-kong ka-pok
53. Club Street	(i) Toa-mng lai	(i) Tai-mun noi
	(ii) Chui-lan teng	(ii) Sui-lan theng
54. Clyde Street	Thih pa-sat ma-ta-chhu tui-bin hang.	Thit pa-sat ma-ta-liu bui-min hong.
55. Clyde Terrace	Ua^{n}-tiam khau	Wun-tim hau.
56. Coleman Street	(i) Chin-seng chhu-pi^{n}.	...
	...	(ii) Chan-seng tai-ok fong pin.
	(iii) Hiok-ni sin chhu au.	...
57. Collyer Quay	(i) Tho-kho au	...
	...	(ii) Tho-fu hau hoi pin

Chinese Characters.	Remarks as to Meaning.
監公加薄	'Kampong Kapor'. (This street is in the Kampong Kapor district and has no definite name. Cf. Dunlop street.)
大門內	(i) 'Within the big gate'. (This has disappeared).
萃蘭亭	(ii) 'Chu-lan pavilion' (see under Ann Siang Hill).
鐵巴虱嗎打厝對面巷	'The lane opposite the Police Station near the iron market.'
碗店口	' Crockery-shop mouth,' *i.e.* opposite the mouth of the street where these shops are.
振成厝邊	(i) 'Beside Chin Seng's house.'
振成大屋旁邊	(ii) 'Beside Chin Seng's big house.' ('Chin Seng' was the chop of the late Tan Kim Cheng, a well known citizen of Singapore.)
勗尼新厝後	(iii) 'At the back of Tan Hiok Ni's new house.'
土庫後	(i) 'Behind the godowns.'
土庫後海邊	(ii) 'Behind the godowns by the seaside.'

English.	Hokkien.	Cantonese.
	(iii) Ang-teng lo-thau	...
58. Commercial Square.	(i) Tho-kho khau ...	...
	...	(ii) Tho-fu fa-yün pin.
	(iii) Hue-hng kak ...	...
59. Cornwall Street ...	Chiu-long lai ...	Chau-long noi ...
60. Craig Road ...	(i) Gu-chhia-chui kia	...
	(ii) Ka-lek lut ...	...
	...	(iii) San yiong tai uk pin
61. Crawford Road ...	(i) Go-cho bue ...	(i) Lo-cho mei ...
	(ii) Go-cho pa-sat ...	(ii) Lo-cho pa-sat ...
62. Cross Street ...	(i) Kit-ling-a koi ...	...
	...	(ii) Hoi-san kai ha kai

Chinese Characters.	Remarks as to Meaning.
紅燈路頭	(iii) ‘Red lamp landing place’ *i.e.* Johnston’s pier.
土庫口	(i) ‘Mouth of the godowns.’
土庫花園邊	(ii) ‘ ‘Beside the godowns’ flower-garden.’
	(iii) ‘Flower-garden square.’
酒廊內	(See under Beng Hoon Road.)
牛車水畸	(i) ‘Side of Kreta Ayer.’
加力律	(ii) Phonetic only.
	(iii) ‘Beside Sam Yiong’s big house.’ (This street is largely inhabited by Babas, hence the ‘Ka-lek lut.’ ‘San Yiong’ was the chop of the late Tan Kim Tian and it is still used by his descendants; the name is not generally known.)
鵝槽尾	(i) ‘End of Rochore.’
鵝槽巴虱	(ii) ‘Rochore Market.’
吉靈仔街	(i) ‘Kling Street.’ (There are a large number of Kling shops in Cross Street).
海山街下街	(ii) ‘ ‘Hoi-san’ street lower street.’ (‘Hoi-san’ street is Upper Cross street, *q.v.*)

English.	Hokkien.	Cantonese.
63. Cumming Street...	Kam-kong ma-lak kah hi-hng koi	Kam-pong ma-lak-kah hei-yün kai
64. D'Almeida Street	(i) Tho-kho le-long-kwan	(i) Tho-fu ham-lang kwun
	(ii) Hiap Hoat koi ...	(ii) Hip fat kai ...
65. Damer Road ...	(i) Ong-ke sua^n-kah be-liau pi^n	(i) Wong-ka shan-keuk ma-fong pin
	(ii) Ong-ke sua^n-kha Kong-pan-ge phah chioh	...
66. Delta Road ...	O kio ...	Wu khiu ...
67. De Souza Street ...	Lam-in-tang tho-kho kak-thau	Lam-yin-thung tho-fu kok-thau
68. Dickson Road ...	Kam-kong ka-poh ...	Kam-pong ka-pok ...

Chinese Characters.	Remarks as to Meaning.
監公馬六甲戲園街	'Kampong Malacca theatre street.' (but see Angus Street).
土庫黎瓏舘	(i) 'The auction-rooms by the godowns.'
協發街	(ii) 'Yap Watt street.' (The first name refers to Powell and Crane's auction-rooms, and the second to the chop of a firm which recently occupied premises there).
王家山脚馬寮邊	(i) 'Beside the stables at the foot of the Government Hill' (*i.e.* Fort Canning).
王家山脚公班衙打石	(ii) 'At the foot of Fort Canning where the Municipality breaks stones.' (There is a Municipal store-yard close by).
烏橋	'The black bridge.' (This name is also given by Hokkiens to part of Balestier Road *q.v.*)
藍烟筒土庫角頭	'Blue funnel godown corner.' (Mansfield & Co's godown is the corner of this street.)
監公加薄	'Kampong Kapor.' (cf. Clive Street, Dunlop Street &c.)

English.	Hokkien.	Cantonese.
69. Dunlop Street ...	Kam-kong ka-poh hue^n (or toa) koi	Kam-pong ka-pok wang (or tai) kai
70. Duxton Road ...	(i) Gu-chhia-chui kia...	...
	(ii) Tok-sun lut ...	(ii) Tak-sun lut ...
	(iii) Kam-kong-a lai...	...
71. Ellenborough Street	Sin pa-sat pi^n ...	San pa-sat pin ...
72. Enggor Street ...	Chin-seng sua^n khau...	Chan-seng shan hau ...
73. Esplanade ...	(i) Toa-kok cheng chhau-po	...
74. Farquhar Street ...	Go-cho lut bo-bue hang	Lo-cho lut mo-mei hong
75. Fish Court ...	Lo-ma pan-jiang hang	Lo-ma pan-yang hong

Chinese Characters	Remarks as to Meaning.
大或街橫薄加公監街	‘Kampong Kapor Cross (or big) street.’ (This is perhaps is the biggest street in what is known as Kampong Kapor. The Chinese have not yet given names to the streets here.)
崎水車牛	(i) At the side of Kreta Ayer (cf. Craig Road).
律順德	(ii) Phonetic, but commonly used.
內仔公監	(iii) Within the little ‘Kampong.’
邊虱巴新	‘Beside the New Market’ (Ellenborough Market).
口山成振	‘Chin-Seng Hill mouth’ (see under Bernan Street).
	(i) ‘Grass field in front of Supreme Court.’
巷尾無律槽梧	‘Rochore Road no end lane) or cul-de-sac.’ (see under Carnie street).
巷讓班嗎路	‘Rumah Panjang lane.’ (‘Rumah Panjong’=‘long house,’ and is practically a house of ill fame: in Singapore it is the name given to a district in the neighbourhood of the junction of Rochore Road with North Bridge Road.)

English.	Hokkien.	Cantonese
76. Fish Street ...	Sin pa-sat pi^{n} ...	San pa-sat pin ...
77. Fisher Street ...	Kam-kong ma-lak-kak Tan-seng-ong au	Kam-pong ma-lak-kah chhan-sheng-wong hau
78. Flint Street ...	Tho-kho bue ...	The-fu mei ...
79. Fraser Street ...	(i) Sio-po sin-koi ...	...
	...	(ii) Kam-pong san-kai
80. Garden Street ...	(ii) Thih pa-sat gek-lu-ma hang	...
	(ii) Thih pa-sat tui-bin hang	Thit pa-sat tui-min hong
81. George Street ...	(i) Po-le-au sun-hong koi	...
	...	(ii) Po-li-sz hau-pin kai
82. Gopeng Street ...	Cho-su-kong khau ...	Cho-sz-kung

Chinese Characters.	Remarks as to Meaning.
新巴虱邊	'Beside the New Market.' (See Ellenborough Street. Fish Street and the latter are one on each side of the Ellenborough Market).
監公麻𠯈呷 陳聖王後	'Behind the Tan-seng-ong (temple) in Kampong Malacca.'
土庫尾	'End of the godowns.'
小坡新街	(ii) 'Small town in New Street.'
金榜新街	(ii) 'Kampong (Glam) New Street.' (Cf. Chin Hin Street).
鐵巴虱玉呂馬巷	(i) 'Lane of the 'Gek-lu-ma' idol near the iron market.'
鐵巴虱對面巷	(ii) 'Lane opposite the iron market.' (The lane runs into Beach Road opposite Clyde Terace Market.
保黎後順豐街	(i) 'Behind the Central Police Station street of chop 'Sun Hong.'' (Commonly spoken of simply as behind the Police Station).
玻璃土後便街	(ii) 'Behind the Police Station Street.'
祖師宮口	'Mouth of the Cho-su-kong temple.' (This name has to do duty for a number of

English.	Hokkien.	Cantonese
83. Guthrie Lane ...	Kat-ti-li hang-a lai ...	Kat-tei-lei hong-tsai ...
84 Haji Lane ...	(i) Huan-a kam-kong lai	...
	(ii) Jiau-a koi kam-kong lai	...
	...	(iii) Yau-wa kai hong tsai
85. Havelock Road ...	(i) Kong chioh-a ...	...
	(ii) Hong lim pa-sat ...	...
	(iii) Chiu-long lai ...	Chau-long noi ...
	...	(iv) Pak-khi-lin chik kai.
86. High Street ...	(i) Toa-kok Koi ...	(i) Tai-kot kai ...

Chinese Characters.	Remarks as to Meaning.
	streets in the Tanjong Pagar district, where as a matter of fact the streets have no fixed names).
葛地利巷仔內	'Guthrie Lane.' (This is a new thoroughfare and it is so far only know by its Municipal name).
番仔監公內	(i) 'Within the Malay Kampong.'
爪亞街監公內	(ii) 'Within the Arab Street Kampong.'
爪亞街巷仔	iii) 'Arab Street little lane.' (Haji Lane lies parallel to Arab Street).
貢石仔 芳林巴虱	(i) 'Stone-breaking.' (ii) 'Hong Lim Market.' (This is the name of that part near the Police Station where the late Cheang Hong Lim built a market years ago. Stones for use on the roads used to be broken near the Police Station).
酒廍內	(iii) 'Within the spirit-depôt (district).' (See under Beng Hoon Road).
北其粦直街	(iv) 'Pickering strait street,' *i.e.* the street in the same line as the Chinese Protectorate.
大咯街	(i) 'Supreme Court Street.'

English.	Hokkien.	Cantonese.
	(ii) Sang-che^{n} lo ...	...
87. Hill Street ...	(i) Ong-ke sua^{n} kha ...	(i) Wong-ka shan keuk
	(ii) Tiau-kio thau ...	(ii) Tiu-khiu thau ...
88. Hock Lam Street	Hok-lam koi ...	Fuk-nam kai ...
89. Hokkien Street ...	(i) Tso be-chhia koi ...	...
	(ii) Chhiang-thai koi e chat ...	...
	...	(iii) Cheung-thai ha kai
90. Halloway Lane ...	(i) Sio-po thih-chhio au koi	...

Chinese Characters.	Remarks as to Meaning.
雙井路	(ii) 'Two wells road.' (This name is not much used now. Formerly there were two wells at the foot of Fort Canning just where High Street joins Hill Street).
王家山脚	(i) 'Foot of Government Hill.' (Government Hill in the old days was Fort Canning Hill).
吊橋頭	(ii) 'End of the suspension bridge.' *i.e.* the bridge connecting Hill Street and New Bridge Road.
福南街	' 'Hok-lam' street.' ('Hok-lam' is the chop of Lau Kim Pong who owns many houses in this street).
做馬車街	(i) 'The street where (horse) carriages are made.'
長泰街下節	(ii) 'Lower portions of 'Chhiang Thai' Street.'
長泰下街	(iii) ' 'Chhiang Thai' lower street.' (The street is called the 'lower part of Chhiang Thai street,' because Upper Hokkien Street is 'Chhiang Thai' Street. 'Chhiang Thai' is the style of a well known temple in the street).
小坡鐵廠後街	(i) 'The street behind the iron foundry in 'small town' (see Beach Road).

English.	Hokkien.	Cantonese.
	...	(ii) Kam-pong ta-thit-chhong hau-pin
	(iii) Sek-a-ni la-pai-tng tui-bin hang	...
91. Hong Kong Street.	Ma-kau koi ...	Ma-kau kai ...
92. Hong Lim Quay...	(i) Kam-kong Ma-lak-kah hai-ki^n	(i) Kam-pong ma-lak kah hoi pin
	(ii) Kam-kong Ma-lak-kah chha-chun thau	...
93. Hylam Street ...	(i) Hai-lam koi ...	(i) Hoi-nam kai ...
	(ii) Hai-lam hue-kuan au	...

Chinese Characters.	Remarks as to Meaning.
金榜打鐵廠後便	(ii) 'Behind the iron foundry in Kampong Glam).
色仔年禮拜堂對面巷	(ii) 'The lane opposite the Portuguese Church' (cf. Bain Street.)
馬交街	'Macao Street.' (I cannot explain this name satisfactorily. I am told that the street is known to the Chinese as Macao Street, because many Chinese from Macao lived there. But the Chinese know Macao by the name "O-mun." I do not think therefore that that can be the correct explanation. More probably it is adopted from Malay. Malays call Cantonese "Orang Macao," and this street was the home of many Cantonese women at one time.
監公麻𠯿呷海墘	(i) 'Kampong Malacca seashore.'
監公麻𠯿呷柴船頭	(ii) 'Kampong Malacca timber-boat landing-place.'
海南街	(i) 'Hailam Street.'
海南會館	(ii) 'Behind the Hailam kongsi house.'

English.	Hokkien.	Cantonese.
94. Jalan Besar	Kam-kong ka-poh thai-tu long	Kam-pong ka-pok thong-chü fong
95. Jalan Klapa	Tio^{n}-sian-su pi^{n}	Chheung-sin-sz (fong) pin
96. Jalan Kledek	(i) Huan-a thiong-cheng tong tiau	...
	...	(ii) Ma-lai fan tui-min chung-kan ko-thiu
97. Jalan Kubor	(i) Huan-a thiong-cheng be-liau	...
	...	(ii) Ma-lai fan tui-min ma-fong
98. Jalan Penang	Eng-chhai ti	...
99. Jalan Pisang	(i) Huan-a thiong-cheng thau-tiau	...
		(ii) Ma-lai fan tui-min tai-yat thiu
100. Jalan Sultan	Ji-chap-keng	Yi-shap kan

Chinese Characters.	Remarks as to Meaning.
監公加薄刣猪廊	'The Slaughter-pig depot in Kampong Kapor': referring of course to the Abattoir.
張先師邊	'Beside the 'Tio^n Sian-Su' temple.'
番仔塚前條	(i) & (ii) "The Middle Street in front of the Malay Cemetery."
馬拉墳對面中間個條	(i) & (ii) 'The stable in front of the Malay cemetery.'
番仔塚前馬寮	
馬拉墳對面馬房	(i) & (ii) 'The stable in front of the Malay cemetery.'
子菜地	'Ground where (a vegetable called) 'eng-chhai' is planted.'
番仔塚前頭條	(It is a kind of water-vegetable).
馬拉墳對面第一條	(i) & (ii) 'The first street in front of the Malay cemetery.'
二十間	'Twenty buildings.' The 20 houses referred to were those first put up in that part of Beach Road near Jalan Sultan.)

English.	Hokkien.	Cantonese.
101. Japan Street ...	(i) Ma-cho kiong pi^{n}...	...
	(ii) Tng-lang leng-su-hu hit-tiau	...
	(iii) Tit-loh a-ek Kit-leng bio pi	...
	...	(iv) Yat-pun kai ...
102. Java Road ...	(i) Peh-thah koi	(i) Pak thap kai ...
	(ii) Sio-po phah-chioh koi	...
	...	(iii) Kam-pong ta sheh kai
103. Jeddah Street ...	(i) Sio-po sam-pai-yang teng hang	...

Chinese Characters.	Remarks as to Meaning.
媽祖宮邊	(i) 'Beside the ma-cho temple.' (cf. Amoy Street).
唐人領事府那條	(ii) 'The street where the Chinese consul lives.' This name is accurate enough at present but obviously will not be permanent.)
直落亞逸吉靈廟邊	(iii) 'Beside the Kling temple in Telok Ayer.'
日本街	(iv) 'Japan Street.'
白塔街	(i) 'White Pagoda Street.'
小坡打石街	(ii) & (iii) Stone-breaking street 'small town' or Kampong (Glam).'
金榜打石街	
小坡三拜秧亭巷	(i) The lane of the praying pavilion in 'small town.' ('Sam-pai-yang' is the Malay town 'Sembaiang.' The street leads from Beach Road to a mosque. The name illustrates the distinction drawn by Chinese between a Mahomedan place of worship and a temple of their own. (The essence of Mahomedanism is prayer, while Chinese pay more attention to vows and acts of adoration).

English.	Hokkien.	Cantonese.
	(ii) Thih pa-sat tui-bin hang	(ii) Thit pa-sat tui-min hong
104. Johore Road ...	Au-be-chhia lo chiong-kun-ia-kiong	Hau-ma-chhe lo che-ong-kwan-ye miu
105. Kallang Road ...	(i) Ka-lang kio ...	(i) Ka-lang kiu ...
	(ii) Ka-lang lut ...	...
	(iii) Heu-sia^n ...	...
	...	(iv) Mui-hai kuk ...
106. Kampong Java Road	Ang-mo thiong ...	Hung-mo fan
107. Kompong Martin	Hu-liou lai ...	Yü-liu ...
108. Kampong Malayu	Ong-hu hang ...	Wong-fu hong ...
109. Kampong Glam-Beach	Toa-che^n kha ...	Tai cheng keak ...
110. Kengcheow Street	(i) Kam-kong ma-lah-kah. Sam-pa-yang teng au	

Chinese Characters.	Remarks as to Meaning.
鐵巴虱對面巷	(ii) ‘ Lane opposite the iron market.’ (cf. Garden Street).
後馬車路將軍爺宮	‘The temple of the idol ‘ Chiong-kun ’ near Victoria Street.’
加籠橋	(i) ‘Kallang bridge.’
加籠律	(ii) ‘Kallang Road.’
火城	(iii) ‘ Fire stronghold.’ } *i.e.* Gas-works.
煤氣局	(iv) ‘ Coal vapour office.’
紅毛塜	‘ European Cemetery.’
魚寮內	‘ Within the fishermen’s village.’
王府巷	‘ Sultan’s house lane.’ (The late Sultan Ali owned property in this street).
大井脚	‘Foot of the big well.’ (There used to be an old well in the middle of the road at Sultan Gate).
監公廊吠呷三拜讓亭後	(i) ‘ Behind the praying pavilion in Kampong Malacca.’ (A praying pavilion is a mosque, see Jeddah Street).

English.	Hokkien.	Cantonese.
	...	(ii) Kam-pong ma-lak-kak lai-thong hau-pin
	(iii) Keng-chiau koi ...	...
111. Kerbau Lane ...	Phau-be po hang ...	Phau-ma po hong ...
112. Kerbau Road ...	Phau-be po chhau-chhi	Phau-ma po chho-shi
113. Kerr Street ...	Kam-kong ma-lak-kah pun-so chhia tui-bin koi	Kam-pong ma-lak-kah lap-sap chhe tui-min kai
114. Killiney Road ...	Tang-leng pa-sat tui-bin hang	Tang-leng pa-sat tui-nim hong
115. Kim Seng Road...	Hong hin lo ...	Fung heng lo ...
116. Kinta Road ...	Phau-be po hang ...	Phau-ma po hong ...
117. Kling Street ...	(i) Suaⁿ-a teng ... Suaⁿ-kia teng	(i) Shan-tsai teng ...
	(ii) Thih thiau ...	...

Chinese Characters.	Remarks as to Meaning.
金榜麻吠呷禮拜堂對面	(ii) Behind the Kampong Malacca place of worship.’
慶照街	(iii) ‘Keng cheow street’ (so-called after the late Tan Keng Cheow).
跑馬埔巷	‘Race Course Lane.’
跑馬埔草市	‘Race Course grass-market.’
監公馬六甲糞埽車對面街	‘In Kampong Malacca opposite the scavenging carts.’
東陵巴虱對面巷	‘Lane opposite Tanglin Market.’
豐興路	‘Hong Hin Road.’ (‘Hong Hin’ was the chop of Tan Kim Seng).
跑馬埔巷	‘Race Course lane.’ (cf. Kerbau Lane).
山仔頂	(i) ‘Small hill top.’ (There was formerly more of a hill here than now exists. This has been levelled).
鐵柱	(ii) ‘Iron pillars.’ (Mr. Haughton says ‘Many iron pillars were used in the construction of houses in this street’).

English.	Hokkien.	Cantonese.
118. Krian Street ...	Chin-seng sua^{n} khau...	Chan-seng shan hau ...
119. Lavender Street	(i) Go-cho toa kong-si	...
	(ii) Chhai-hng lai ..	...
	...	(iii) Kwong fuk miu kai
120. Lim Eng Bee Lane	(i) Kong-chioh hi-hng au koi ...	...
	...	(ii) Pak-khi-lun tui-min hei-yun hau kai ...
121. Little Cross Street	Jiau-a phah-thang koi	Yau-wa ta-thung kai...
122. Lorong Teluk ...	(i) Bih-lang koi ...	...
	...	(ii) Lo-chham kai ...
123. Macao Street ...	(i) Po-le pi^{n} ...	...

Chinese Characters.	Remarks as to meaning.
口山成振	‘Mouth of Chin Seng’s Hill.’ (cf. Bernam Street.)
司公大槽梧	(i) ‘Big Kongsi-house in Rochore.’ (This refers to the Kongsi house of an old society, the Thien Ti Huë.’)
內園菜	(ii) ‘Within the vegetable gardens.’
街廟福廣	(iii) ‘‘Kwong Fuk’ Temple Street.’
街後園戲石貢	(i) ‘Street behind the thratre near Havelock Road.’
後園戲面對麟麒北街	(ii) ‘Opposite the Chinese Protectorate the street behind the theatre.’ (The theatre is the Wayang Street theatre, and the word used for Chinese Protectorate is the Chinese equivalent of the name of Mr. Pickering, the first Protector of Chinese.)
街銅打亞爪 街銅打華休	‘Javanese coppersmith’s street.’
篾籠街	} (i) & (ii) ‘Bamboo-basket street.’
街籮篸	
邊黎保	(i) & (ii) ‘Beside the Police Courts.’

English.	Hokkien.	Cantonese.
	...	(ii) Po-li-sy fong pin...
	(iii) Kua^{n}-chha tiam ...	...
	...	(iv) Kwun-chhoi pho kai
124. Mackenzie Road...	Tek-kha chui-ti ...	...
125. Magazine Road...	Tan-seng-ong koi ..	Chhan-sheng-wong kai
126. Malabar Street..	Hai-lam hue-kuan hang ...	Hoi-nam wui-kwun hong
127. Malacca Street ...	(i) Lau pa-sat khau	(i) Kau pa-sat ...
	(ii) Ban-hin koi ...	Man-heng kai ...
128. Malay Street ...	(i) Jit-pun koi ...	...
	...	(ii) Yat pun chai kai...
129. Manila Street ...	Sek-a-ni koi ...	...

Chinese Characters.	Remarks as to Meaning.
玻璃士傍邊	(This name was given when the old court was in existence on the south side of the road).
棺材店	(iii) & (iv) 'Coffin-shop street.'
棺材舖街	
脚竹水池	'The Selegie-Road-district reservoir.' (see under Annamallai Chitty Lane)
陳聖王街	'Tan-Seng-ong temple street.' (There is a temple here to Tan Seng Ong the ancestral deity of the Tans).
海南會館巷	'Hailam Kongsi-house lane.'
老巴虱口	(i) 'Old market (mouth).' (The old market is not now in existence, but the present market at Teluk Ayer is often called the 'old market').
萬興街	(ii) 'Chop 'Ban Hin' street.'
日本街	(i) 'Japanese street.'
日本寨街	(ii) 'Japanese brothel street.'
色仔年街	'Eurasian street.' (Several streets in this neighbourhood are called by this name).

English.	Hokkien.	Cantonese.
130. Market Street ...	(i) Tiong koi ...	(i) Chung kai ...
	(ii) Lau pa-sat khau ...	...
131. McCullum Street	Tit lok a-ek bue-tiau koi	...
132 Merbau Road ...	Kam-kong sai-kong ang-mo phah thih	Kam-pong sai-kong hung-mo thit-chhong
133 Merchant Road ...	(i) Sin koi-a khau ...	(i) San Kai hau ...
	(ii) Sin koi-a khau hi-hng koi	...
134 Middle Road ...	(i) Mang-ku-lu ...	(i) Mong-kwo-lo ...
	(ii) Sio-po ang-mo phah thih	...

Chinese Characters.	Remarks as to Meaning.
中街	(i) ‘Central Street.’ (This refers to the five divisions of the town by the Hokkiens for the purpose of the Chingay procession: there were five Ko-thau). 股頭
老巴失口	(ii) ‘Old market mouth.’ (cf. Malacca Street).
直落亞逸尾條街	‘Last street in Teluk Ayer.’ (No definite name has yet been given to this street, but some such expression as this is used).
監公西貢紅毛打鐵 金榜西貢紅毛鐵廠	‘European foundry at Kampong Saigon’ *i.e.* Howarth Erskine & Co.
新街仔口	(i) ‘New street mouth.’ (New street is Chin Hin street and it opens in to Merchant Road).
新街仔口戲園街	(ii) ‘The theatre street at the mouth of the little new street.’
芒菓路	(i) ‘Bencoolen.’ (see under Bencoolen Street).
小坡紅毛打鐵	(ii) ‘Small-town European iron foundry’ (see Beach Road for ‘sio-po’ there is no European foundry now).

English.	Hokkien.	Cantonese.
	(iii) Hai-lam hue-kuan pi^{n}	(iii) Hoi-nam wui-kwun pin
	(iv) Sek-a-ni le-pai-tng pi^{n}	(iv) Sai-yeung lai-pai-thong pin.
	(v) Mang-ku-lu thih-chhio^{n} pi^{n}	(v) Mong-kwo-lo thit-chhong pin
	(vi) Mang-ku-lu chhia kuan	
	...	(vii) Mong-kwo-lo shau-chhe kuk
135 Minto Road ...	Lau-chi hang ...	...
136 Mohamed Ali Lane	Toa-mang-lai hang-a lai	Tai-mun noi hong-tsai
137 Mosque Street ...	(i) Kit-ling bio pi^{n} ...	(i) Kat-leng miu pin ...
	(ii) Hai-san choi ang-mo oh-au	...
	...	(iii) Hoi-shan kai hung-mo shü-kwun hau-pin
138 Muar Road ...	(i) Mua^{n} lut ...	...
	(ii) Kit-ling-a le-pai-tng cheng	(ii) Kat-leng lai-pai-thong min chhin

Chinese Characters.	Remarks as to Meaning.
海南會館邊	(iii) 'Beside the Hailam Kongsi-house.'
色仔年禮拜堂邊	(iv) 'Beside the Portuguese church.'
望久魯鐵廠邊	(v) 'Beside the iron-foundry in Bencoolen.'
望久魯車館	(vi) & (vii) 'Jinrikisha depot in 'Bencoolen."
望久魯手車局	
栳只巷	'Betel-nut lane.'
大門內巷仔內	'Lane off Club Street.'
吉靈廟邊	(i) 'Beside the Kling's temple.
海山街紅毛學後	(ii) & (iii) 'Behind the Europen school in uppen Cross Street.'
海山街紅毛書館後便	
麻律	(i) 'Muar Road' (phonetic).
吉靈仔禮拜堂前	(ii) 'In front of the Kling church'. (The 'Kling Church' is the church of 'Our

English.	Hokkien.	Cantonese.
139 Nagapa Lane ...	Tek-kha tug-tiam tuibin te-ji-tiau	Chuk-keuk tongpho tui-min tai-yi-thu
140 Nankin Street ...	Siong-Pek koi ...	Chhung-phak kai ...
141 Narcis Street ...	Kim-lan bio ...	Kam-lan miu ...
142 Neil Road ...	(i) Gu-chhia-chui Kia	...
		(ii) Ngau-chhe-shui pin ma-ta-liu chek sheung
143 New Bridge Road.	(i) Sin pa-sat ma-ta-chhu cheng	(i) San pa-sat ma-ta-liu chhin
	(ii) Gu-chhia-chui ...	(ii) Ngau-chhe-shui ...
	...	(iii) Yi-ma-lo ...
144 New Market Road	(i) Kam-kong ma-lak-kah sin pa-sat koi	(i) Kam-pong ma-lak-kak san pa-sat kai
	(ii) Chhau-chhi ...	...

Chinese Characters.	Remarks as to Meaning.
	Lady of Lourdes', largely attended by Tamil Christians).
街柏松	'Second (road) opposite the Selegie Road pawnshop.'
廟蘭金	''Siong Pek' (kongsi) street.'
二第面對店當脚竹條	'Golden lily temple.'
崎水車牛	(i) 'Steep (part of) Kreta Ayer.'
直寮打馬邊水車牛上	(ii) 'Near Kreta Ayer, straight up past the Police station.'
前厝打馬虱巴新	(i) 'In front of the New Market police station.'
水車牛	(ii) 'Kreta Ayer.'
路馬二	(iii) 'Second horse (carriage) road.'
虱巴新呷𠯈麻公監街	(i) 'New market street in Kampong Malacca.'
市草	(ii) 'Grass-market.'

English.	Hokkien.	Cantonese.
145 Niven Road ...	Ji-ong sua^{n}-kha ...	Yi-wong shan keuk ...
146 Noordin Lane ...	...	Lo Lam kai ...
147. North Boat Quay	(i) Kek-sng cheng ...	...
	(ii) Ong-ke sua^{n} kha au	(ii) Wong-ka shan-keuk hau-pin
	(iii) Chin-heng toa chhu	(iiii) Chan-heng tai ok
	(iv) Tiau-kio thau bi-kau	...
148. North Bridge Road	(i) Chui-sien mng ...	...

Chinese Characters.	Remarks as to Meaning.
	(This only refers to that part of the road which runs up to the People's Park.)
二王山脚	'Foot of second Governor's hill.' (Formerly Government Hill was Fort Canning and the Chinese still speak of Fort Canning by that name. The present Government Hill is called 'second Governor hill' to prevent confusion. 'Second Governor' is the idiom in Colonial Secretary.)
羅琳街	'Lo Lam's Street.' (I am told that one Lo Lam owns property here, but the Hokkien pronunciation ('Lo-Lim') sounds very like 'Noordin' in disguise.)
格霜前	(i) 'In front of the ice-factory.'
王家山脚後	(ii) 'Behind the (road along the) foot of Fort Canning.'
振興大厝	(iii) 'Chin Heng' big house. ('Chin Heng' is the chop of Seah Liang Sean. This refers to the part lower down the river).
吊橋頭米郊	(iv) 'Suspension-bridge rice-stores.'
水仙門	(i) 'Water-fairy gate.' (See under Bain Court).

English.	Hokkien.	Cantonese.
	(ii) Sio-po hue-chhia lo	...
	(iii) Lo-ma pano-jiang toa be-chhia lo	...
	...	(iv) Kam-pong taik ma lo
149. North Canal Road	(i) Kau-a ki^{n} ...	...
	...	(ii) Tan-pin kai ...
150. Omar Road ...	Kam-kong mak-la-kah Sam-pai-gang teng hang	...
151. Ophir Road ...	Kit-ling le-pai-tng cheng chiang-kun iapi^{n}	...
152. Orchard Road ...	Tang leng pa-sat koi...	Tang-leng ...

Chinese Characters.	Remarks as to Meaning.
小坡火車路	(ii) 'Small town tramway.' (See Beach Road.)
羅媽班讓大馬車路	(iii) "Rumah Panjang' big horse-carriage road.' (cf. Fish Court.)
金榜大馬路	(iv) 'Kampong (Glam) big horse-(carriage) road.'
溝仔墘	(i) 'Beside the little drain.' (The drain down the centre of the roadway was filled up some years ago.)
單邊街	(ii) 'One-side street.' (There are houses on one side only cf. Upper Macao Street.)
監公麻𠯈呷三拜秧亭巷	'Kampong Malacca praying-temple lane.' ('Sam pai yang' is the Malay 'Sĕmbaiang' and a praying-temple is a mosque.)
吉靈禮拜堂前將軍爺邊	'In front of the Kling church beside Johore Road.' (See under Muar Road and Johore Road.)
東陵巴虱街	'Tanglin market street.' (As a matter of fact 'Tang leng' is the most one gets from a Chinaman, unless he is pressed).

English.	Hokkien.	Cantonese.
153 Ord Road ...	(i) Ong-ke sua^n-kha thih-chhio^n	...
	...	(ii) Na-lei thih-chhong
154 Outram Road ...	(i) Si-pai po ...	(i) Si-pai po ...
	(ii) Si-kha teng ...	...
155 Padang Alley ...	Ong-hu khut-than hang	Wong-fu kwat-than hong
156 Pagoda Street ...	(i) Kit-ling-a le-pai au	...
	(ii) Kit-ling bio au ...	...
	...	(iii) Kat leng miu pin kai
157 Pahang Street ...	Ong-hu hang ...	Wong-fu hong ...
158 Palembang Road..	Peh thah koi au koi ...	Pak thap kai hau kai...

Chinese Characters.	Remarks as to Meaning.
王家山脚鐵廠	('Iron foundry at foot of Fort Canning.'
那利鐵廠	(ii) 'Riley (Hargreaves') iron foundry.' ('Na-lei' has to do duty in Cantonese for 'Riley.')
施排埔	(i) 'Sepoy plain.' (The Sepoy lines and Police Station and parade ground are at one end of Outram Road.)
四脚亭	(ii) 'Four-footed pavilion.' (There is a pavilion in the Cemetery adjoining this road, known by this name.)
王府掘頭巷	'The cul-de-sac (near) the Sultan's house.' (See under Kampong Malayu.)
吉靈仔禮拜堂後	(i) 'Behind the Kling place of worship.'
吉靈廟後	(ii) 'Behind the Kling temple.'
吉靈廟邊街	(iii) 'Street beside the Kling temple.' (The Kling temple is a Mohamedan Kling mosque).
王府巷	'Sultan's house lane.' (See under Kampong Malayu).
白塔街後街	'The street behind 'White Pagoda' Street.' (See Java Road.)

English.	Hokkien.	Cantonese.
159 Park Road	(i) Chhau-chhi	(i) Chho-shi
	...	(ii) Chan-chü shan kenk
160 Paterson Road	(i) Tang-leng ma-ta-chhu au	...
	...	(ii) Tang-leng ma-ta-liu hau pin kai
161 Pearl's Hill Road	Chin-chu sua^{r}	Chan chü shan
162 Pekin Street	I-sio^{n} koi	Yi-seung kai
163 Phillip Street	(i) Lau-ia-keng khau	...
	...	(ii) Ma-miu kai
164. Prinsep Street	Mang-ku-lu sau-lo koi	Mong-kwo-lo so-lokai
165. Pulo Saigon	(i) Thai-tu-long khau	...
	...	(ii) Thong-chü fong

Chinese Characters.	Remarks as to Meaning.
草市	(i) 'Grass-market.'
珍珠山脚	(ii) 'Foot of Pearl's Hill.'
東陵馬打厝後	(i) & (ii) 'Behind Tanglin Police Station.'
登陵馬打寮後便街	
珠珍山	'Pearl Hill.'
衣箱街	'Clothing-box street.' (There are a large number of box-makers in this street.)
老爺宮口	(i) 'Mouth of the Idol's Temple.'
孖廟街	(ii) 'Double temple street.' (Two temples are enclosed in one outer wall.)
望久魯掃路街	'Scavenging street in the Bencoolen district.' (There are Scavengers' carts kept at the corner of Prinsep Street).
刣猪廍口	'Slaughter-pig-depot mouth,' *i.e.* near the Abattoirs.
屠猪房	'Slaughter-pig compartment.' (It would be necessary to add something like Kampong Malacca or Kampong

English.	Hokkien.	Cantonese.
166. Queen Street ...	(i) Sek-a-ni koi ... Sek-kia^n-ni koi	...
	...	(ii) Lam sam tai u k kai
167. Raffles Place ...	Tho-kha hue-hng ..	Tho-fu fa-yün (pin)...
168. Ramah Street ...	Toa-mng lai ...	Tai-mun noi chau-tim kak-lei
169. Rangoon Road ...	Na^n-tau hang ...	...
170. Raub Street ...	Chin-seng sua^n khau ...	Chan-seng shan hau...
171 Read Street ...	Ong-ke sua^n kha thih-cheio^n pi^n	Wong-ka shan keuk thit-chhong pin

Chinese Characters.	Remarks as to Meaning.
	Saigon to avoid confusion with the Jalan Besar Abattoirs.)
色仔年街	(i) ‘Eurasian (serani) Street.’ (Part of Queen Street will be included in ‘Mang ku lu’ see Bencoolen Street, and part again shares in the names of other streets.)
林三大屋街	(ii) ‘Lim Sam’s big house street.’
土庫花園邊	‘The flower garden by the godowns.’ (See Commercial Square.)
大門內 大門內酒店隔離	‘Inside the big gate next to the spirit-shop.’ (cf. Club Street: the spirit-shop is the present ‘Hotel Trieste.’)
籃兜巷	‘Na^{n}-tau lane.’ (‘Na^{n}-tau’ is the name of a plant with prickly leaves which grows here. Douglas’ Dictionary says it is the ‘pandanus’ or ‘screwpine.’)
振成山口	‘Mouth of Chin Seng’s hill.’ (See Bernam Street.)
王家山脚鐵廠邊	‘Beside the iron foundry at the foot of Fort Canning hill.’ (The iron foundry is Riley Hargreives &

English.	Hokkien.	Cantonese.
172 River Valley Road	(i) Ong-ke suaⁿ kha ...	(i) Wong-ka shan keuk
	(ii) Leng-thau cheⁿ ...	...
173 Roberts Lane ...	Phau-be po hang ...	Phau-ma po hong ...
174 Robinson Road ...	Heng-liong koi ...	Heng-lung kai ...
	...	Lo-man-san kai ...
175 Rochore Canal Road ..	(i) Mang-ku-lu kang-a kiⁿ	...
	...	(ii) Mong-kwo-lo chhung-pin

Chinese Characters.	Remarks as to Meaning.
	Co's Workshop. For the expression translated by 'Fort Canning hill' see Hill Street.
王家山脚	(i) 'Foot of Fort Canning hill.' (cf. Hill Street.)
龍頭井	(ii) 'Dragon's head fountain.' (There used to be a fountain at the end or this street with a Dragon's head fof a spout.)
跑馬坡巷	'Race Course lane' (see Belilios Road).
興隆街	' 'Heng-long' Street.' (Chop 'Heng-long' belonging to Lok yu, the well-known towkay, is in this street.)
羅民申街	'Robinson Street.' ('Lo-man-sen' is 'Robinson,' and the name which has been used to my knowledge, is quite Chinese in sound at any rate. I do not however guarantee the name as being intelligible to the ordinary Cantonese-speaking Chinaman. To interpret 'Robinson' Road clear to him, would require I feel quite sure, a very long rigmarole.)
望久魯港仔墘 芒菓路涌邊	(i) & (ii) 'Beside the canal in the Bencoolen District.'

English.	Hokkien.	Cantonese.
176 Rochore Road ...	(i) Go-cho lut ...	(i) Lo-cho kai ...
	(ii) Lo-ma pan-jiang ...	...
177 Sago Lane ...	Ho-ban-ni^{n} au koi ...	Ho-man-nin hau-pin kai
178 Sago Street ...	Gu-chhia-chui hi-hng-koi cheng koi	Ngau-chhe-shui hei-yün chhin kai
179 Samban Street ...	A-bit-no hang ...	...
180 Scott's Road ...	Tang-leng ma-ta-chhu tui-bin	Tang-leng ma-ta-liu tui-min
181 Selegie Road ...	(i) Tek-kha ...	...
	(ii) Tek-kha tit-koi ...	...

Chinese Characters.	Remarks as to Meaning.
梧槽律街	(i) This is phonetic, but commonly used. (The character only suits the Hokkien name, for in Cantonese it is sounded 'ng', 'lut' is simply 'road' from Chinese lips.)
羅媽班讓	'Rumah panjang.' (The name is really applicable to a District more than one street; cf. 'Fish Court and North Bridge Road.)
賀萬年後街	'The street behind 'Ho-man-nin.' ('Ho-man-nin' is the chop of a well known Chinese singing-hall in Sago Street.)
牛車水戲園前街	'The street in front of the theatre (street) in Kreta Ayer.'
亞蜜奴巷	'Habib Nor lane.' (Habib Nor was an Arab, now deceased: the street is so named because a 'Kramat' exists there which is dedicated to him.)
東陵馬打厝對面	'Opposite Orchard Road Police Station.'
竹脚	(i) 'Foot of the bamboos.'
竹脚直街	(ii) 'Foot of the bamboos, Straight Street.'

English.	Hokkien.	Cantonese.
	(iii) Tek-kha tng-tiam hit-tiau	...
182 Seok Wee Road	Siok-iu sua^n teng ...	...
183 Serangoon Road ...	Au-kang ...	Hau-kong ...
184 Shaikh Madarsah Lane	Ku ba-li ...	Kau-ma-li ...
185 Short Street ...	Tek-kha so-si-tek hang	...
186 Smith Street ...	(i) Gu chhia chui hi-hng poi	Ngau-chhe-shui hei-yün kai
187 Solomon Street ...	Kam-kong ma-lak-kah bue-tiau koi	...
188 Sophia Road ...	(i) Ji-ong sua^n kha ti tek-kha khi	...

Chinese Characters.	Remarks as to meaning.
竹脚當店那條	(ii) 'Street of the foot of the bamboos pawnshop.' ('Tek Kha' is the name for a large district. There are no bamboos visible now.)
叔位山頂	'Seok Wee's plantation.' (See under Chin Swee Road.)
後港	'Back creek.'
舊峇厘	'Old Bali.' (See under Bali Lane.)
竹脚蘇施竹巷	'So-si-tek lane in Tek Kha.' ('So-si-tek' is 'short' in Chinese guise: and Tek Kha means the Selegie Road district. There is no proper name for this street in Chinese.)
牛車水戲園街	'Theatre street in Kreta Ayer.'
監公麻六呷尾條街	'End street in Kampong Malacca.'
二王山脚自竹脚起	(i) & (ii) 'Foot of Second Governor's hill going up from 'Tek Kha.'

English.	Hokkien.	Cantonese.
	...	(ii) Yi-wong shan-keuk yau chuk-tsai keuk hui
189 South Bridge Road	Gu-chhia chui toa be-chhia lo	(i) Ngau-chhe-shui tai ma-lo
	(ii) Chhat-bok koi ...	(ii) chhat-muk kai ...
190 South Canal Road	Po-le au kang-a ki^{n} ...	Po-le hau ...
191 Spring Street ...	...	Fan-tsai mei ma-ta-liu pin
192 Stamford Road ..	(i) Lau-chui khe^{n} ...	...
	...	(ii) Pun-kei fau-hai pho
193 Stanley Street ...	i) Ma-cho kiong hi-tai au	...

Chinese Characters.	Remarks as to Meaning.
二王山脚由竹仔脚去	(‘Tek Kha’ is the name of the Selegie Road neighbourhood.)
牛車水大馬路	(i) ‘The big horse (carriage) road in Kreta Ayer.’
漆木街	(ii) ‘Paint-wood street’ *i.e.* ‘Painter’s street.’ (This refers to the part between the Police Court and the river.
保黎後港仔墘	‘Behind the Central Police Station beside the canal.’ (cf. North Canal Road and Macao Street.)
番寨尾打馬寮邊	‘End of the foreign brothels beside the Police Station.’ (cf. Banda Street.)
流水坑	‘Flowing-water ditch.’ (This appears to refer to the Stamford Road canal, which is notorious for being so often practically stagnant.)
本記番鞋舖	(ii)‘ ‘Pun Ki’ foreign shoe shop’ (There is an old established Chinese shoe-makers’ shop chop ‘Pun ki’ near the Bishop’s House.)
媽祖宮戲臺後	(i) & (ii) ‘Behind the Ma-cho temple theatrical stage.’ (cf. Amoy Street.)

English.	Hokkien.	Cantonese.
	...	(ii) Kun-yam miu hei-thoi hau
194 Sultan Gate ...	(i) Sio-po phah thih koi	(i) Siu-po ta-thit kai...
	(ii) Ong hu khau ...	...
195 Sultan Road ...	Phah-tang koi ...	Ta-thang kai ...
196 Sumbawa Road ...	Hue-long koi ...	Fo-long kai ...
197 Sungei Road ...	Tek-kha ma-ta-chhu tui-bin gu-long pi^{n} koi	Chuk-tsai ma-ta-liu tui-min ngau lan pin kai
198 Syed Alwee Road	(i) Sai-ek a-lui koi thai-tu-long pi^{n}	...
	...	(ii) Thong-chü-fong pin sai-a-lui kai
199 Synagogue Street	Po-le-au te-ji tiau koi	Po-le-hau tai-yi thiu kai
200 Tampinis Road ...	(i) Kam-kong sai-kong khoi-ki^{n}	Kam-pong sai-kong chhung-pin

Chinese Characters.	Remarks as to Meaning.
觀音廟戲檯後	
小坡打鐵街	(i) 'Blacksmith's streets in 'small town.'' (For 'Sio-po' see Beach Road).
王府口	(ii) 'Palace mouth.' (cf Kampong Malayu
打銅街	Coppersmith's street.
火廊街	'Steam mill street.' (So called after the steam rice mill in Beach Road, which is not far off).
竹脚馬打厝對面牛廊邊街	'The street beside the cattlepens opposite the Tek kha Police Station.' (Sungei Road starts almost opposite Kandang Kerbau Police station: for 'Tek kha' see Selegie Road).
西逸亞雷街剖猪廊邊	(i) & (ii) 'Syed Alwee street beside the abattoirs.'
屠猪房邊西亞雷街	
保黎後第二條街	'Second street behind the (Central) Police (Station).
監公西貢溪邊	(i) 'Beside the creek at Kampong Saigon'

English.	Hokkien.	Cantonese.
	(ii) Kam-kong sai-kong phah-thih au	...
201 Tanglin ...	Toa Tang-leng ...	Tai Tang-leng ...
203 Tanjong Pagar Road	Tan-jiong pa-kat ...	Tan-yong pa-kat ..
203 Tank Road ...	Ong-ke sua^{n} au ...	Wong-ka shan hau ...
204 Tan Quee Lan Street	Kui-lan hang ...	Kwai-lan kai ...
205 Tan Tye Place ...	Ong-ke sua^{n} kha thih-long pi^{n} thau	Wong-ha shan keuk thih-chhong pin
206 Teluk Ayer Street	(i) Guan-sun koi ...	...
	...	(ii) Tai pak kong miu kai
207 Teluk Blanga ...	(i) Sit-lat mng ...	...
	...	(ii) Sai-pak mun ...

Chinese Characters.	Remarks as to Meaning.
監公西貢打鐵後	(ii) 'Behind the iron foundry at Kampong Saigon.' (The iron foundry is Howarth Erskine's.)
大東陵	'Big Tanglin.' (There is however no 'little Tanglin' that I am aware of.)
丹戎巴葛	(Phonetic.)
王家山後	'Behind Fort Canning hill.' (cf North Boat Quay (ii))
桂蘭巷	'Kui lan Street.'
王家山脚鐵廊邊頭	'Beside the iron foundry at the foot of Fort Canning hill.'
源順街	(i) ''Guan Sun' street.' ('Guan Sun' is the name of one of the five divisions of Hokkiens who take part in the chingay procession once every three years.)
大伯公廟街	(ii) 'Toa-peh-kong temple street.'
實叻門	(i) 'Singapore gate.'
西北門	(ii) 'North-west gate.'

English.	Hokkien.	Cantonese.
208 Teochew Street ...	(i) Sin koi thau ...	...
	...	(ii) Chhiu-chau kai ...
209 Thomson Road ...	(i) Ang-kio thau ...	(i) Hung khiu thau ...
	(ii) Miⁿ-kua keng ...	...
	(iii) Hai-lam suaⁿ ...	...
	...	(iv) Pek shan theng ...
210 Tong Watt Road	Kong chioh-a chiu-long thau	...
211 Tras Street ...	Cho-su kong khau ...	Cho-sz kong ...

Chinese Characters.	Remarks as to Meaning.
	(This is apparently what the name means, but it has been suggested to me that 'Sai-pak mun' is simply a Cantonese curruption of sit-lat mng).
新街頭	(i) 'Head of New Street.' (New Street is Chin Hin street.)
潮州街	(ii) 'Tiechiu Street.' (The street was at one time largely occupied by Teochew women.)
紅橋頭	(i) 'Head of the Red Bridge.' (The 'Red bridge is that connecting Thomson Road and Kampong Java Road.)
麵乾間	(ii) 'Vermicelli buildings.'
海南山	(iii) 'Hailam hill *i.e.* 'burying-place.'
碧山亭	(iv) 'Pek Shan theng (cemetery)'.
貢石仔酒廊頭	'Head of the Spirit depot (quarter) in Havelock Road district'. (cf Beng Hoon Road.)
祖師宮口	'Mouth of the Cho Su Kong temple.' (cf)

English.	Hokkien.	Cantonese
212 Tringganu Street	(i) Gu-chhia-chui hue^{n}-koi	...
	...	(ii) Ngau-chhe-shui hei yün wang kai
213 Upper Chinchew Street	Tau-hu koi ...	Tau-fu kai ...
214 Upper Circular Road	Be-chhia koi ...	Ma-chhe kai ...
215 Upper Cross Street	Hai-san koi ...	Hoi-san kai ...
216 Upper Hokkien Street	Chhiang thai koi ...	Chheung thai hai ...
217 Upper Macao Street	(i) Po-le-pi^{n} ...	...
	...	(ii) Tan pin kai ...
218 Upper Nankin Street	Siong-pek koi ...	Chhung-phak kai ...

Chinese Characters.	Remarks as to Meaning.
街横水車牛	(i) & (ii) 'The cross street or cross theatre street in Kreta ayer.'
街横園戲水車牛	(cf Smith Street, Sago Street.)
街腐荳	'Bean-curd street.' (See Chinchew street.)
街車馬	'Horse-carrage road.' (So called because there are coachbuilders there.)
街山海	'Hai-san street.' (So called after the Haisan Kongsi-house which was in the street.)
街泰長	'Chhiang Thai street.' (See under Hokkien Street.)
邊黎保	(i) 'Behind the Police Courts.' ('Po-le' is used either for the present Police Police Courts or in some cases for the site of the old courts where the Central Station stood till it was pulled down a few months ago).
街邊單	(ii) 'One-side street.' (cf North Canal Road.)
街栢松	'Siong-pek street.' (See under Nankin Ltreet.)

English.	Hokkien.	Cantonese.
219 Veerappa Chitty Lane	Tek-kha tng-tiam tui-bin thau-tiau hang	Chuk-tsai-keuk tong-pho tui-min tai-yat thiu hang
220 Victoria Street ...	(i) Au be-chhia lo ...	...
	...	(ii) Kam-pong yi ma-lo
221 Wallich Street ...	Tan-jiong pa-ka seng-ong kang pi^n	...
222 Waterloo Street	(i) Mang-ku-lu chhai-tng koi	...
	...	(ii) Kun-yam miu chai-thong
223 Wayang Street ...	(i) Pek-ki-lin tui-bin hi-hng koi	(i) Pak-khei-lun tui-min hei-yün kai
	...	(ii) Thung-chai yi-yün kai
224 Weld Road ...	Kam-kong ka poh ...	Kam-pong ka-pok ...

Chinese Characters.	Remarks as to Meaning.
竹脚當店對面頭條巷	'First lane opposite the Selegie Road pawnshop.' (cf Nagapa Lane.)
後馬車路	(i) 'Back horse-carriage road.' (As distinct from the main street *i.e.* North Bridge Road.)
金榜二馬路	(ii) 'The second Horse road in Kampong (Glam.)
丹戎巴葛聖王宮邊	'Beside the Seng Ong temple in Tanjong Pagar.'
望八魯菜堂街	(i) 'The street in 'Bencoolen' where the Vegetarians' Hall is.
觀音廟齋堂	(ii) 'The Vegetarians' Hall near the temple of the goddess 'Kun Yam' or 'Kwan Im.'
北麒麟對面戲園街	(i) 'Theatre street opposite the Chinese Protectorate.' (cf Canal Road.)
同濟醫院街	(ii) 'Thang Chai Hospital street.' 'There is a Chinese Hospital in the street.'
監公加薄	Kampong Kapor.' (see Dunlop Street.)

English.	Hokkien.	Cantonese.
225 Wilkie Road ...	(i) Ji-ong sua^n kha ti tek-kha khi	...
	...	(ii) Yi-wong shan keuk yau chuk-tsai keuk hui
Bridges,		
1. Cavenagh ...	Hai-Ki^n thih tiau-kio	Hoi-pin thit tiu-khiu ...
2. Coleman ...	...	Yi-ma-lo khiu ...
3. Elgin ...	Thih tiau-kio ...	Thit tiu-khiu ...
4. Kallang ...	Ka-lang kio ...	Ka-lang khiu ...
5. Read ...	Kam-kong ma-lah-kah kio	Kam-pong ma-lak-kak khiu
6. Thompson Road ...	Ang Kio ...	Hung khiu ...
Police Stations.		
1. Central ...	It ho mata chhu ...	Yat ho ma-ta liu ...
2. Kandang Kerbau ...	Tek-kha ma-ta chhu...	Chuk-tsai keuk ma-ta-liu
3. Kreta Ayer ...	Gu-chhia-chui ma-ta-chhu	Ngau-chhe-shui ma-ta-liu
4. Marine ...	Hai-kuan ma-ta chhu	Hoi-kwan ma-ta liu ...

Chinese Characters.	Remarks as to Meaning.
二王山脚自竹脚起	(i) & (ii) 'Foot of 2nd Governor's hill going up from Selegie Road.'
二王山脚由竹仔脚去	(See Sophia Road. This is descriptive more than an actual name. There is no name for the street.)
海邊鐵吊橋	'Iron suspension bridge by the sea shore.'
二馬路橋	
鐵吊橋	'Iron suspension bridge'
加籠橋	'Kallang bridge.'
監公麻六呷橋	'Kampong Malacca bridge.'
紅橋	'Red bridge.'
一號馬打厝	'No. 1 Police house.'
竹脚馬打厝	'Selegie Road District Police house.'
牛車水馬打厝	'Water cart Police house.'
海關馬打厝	'Sea office Police house'

English.	Hokkien.	Cantonese.
5. New Bridge Road...	Sin pa-sat ma-ta chhu	San pak sak ma-ta liu
6. Orchard Road ...	Tang-leng ma-ta chhu	Tang-leng ma-ta liu ...
7. Rochore ...	Go-cho ma-ta chhu ...	Lo-cho ma-ta liu ...
8. Sepoy Lines ...	Si-pai po ma-ta chhu ...	Si-pai-lin ma-ta liu ...
Government buildings and other public offices.		
Chinese Protectorate	(i) Pek-ki-lin ...	(i) Pak-khei-luu ...
	(i) Tai-jin ge ...	...
	...	(iii) Phai Kwun ...
Colonial Secretary's Office	Ji-ong ge-mng ...	Yi peng-thau nga-mun
Court of Requests ...	(i) Tho-gun po-le ...	...
	...	(ii) Lo-ngau nga-mun...

Chinese Characters.	Remarks as to Meaning.
新巴虱馬打厝	‘New market Police house.’
東陵馬打厝	‘Tanglin Police house.’
梧槽馬打厝	‘Rochore Police house.’
施排埔馬打厝	‘Sepoy plain (or ‘lines’) Police house.’
北麒麟	(i) ‘Pickering.’ (After Mr. W. A. Pickering, C. M. G., the first Protector of Chinese).
大人衙	(ii) ‘Tai-jin’s office.’ (Tai-jin, literally ‘great man,’ is a term of respect for officials, specialised in the Straits for officials of the Chinese Protectorate).
牌舘	(iii) ‘Licence Office.’ (This refers mainly to the fact that brothels were licenced under the C. D. O. the name however still survives.)
二兵頭衙門	‘Second governor’s office.’
討銀保黎	(i) ‘Sue for money Court.’
囉銀衙門	(ii) ‘Sue for money office.’

English.	Hokkien.	Cantones.
Gaol ...	(i) Kha-khu keng ...	...
	...	(ii) Kam-fong ...
General Hospital ...	(i) Ong-ke pe^{n} chhu ...	...
	(ii) Lo-kun chuu ...	...
	...	(iii) Tai yi-yün ...
Government House ...	(i) Toa-ong chhu ...	...
	...	(ii) Tai peng-thau chü-ka
Land Office ...	(i) Ga-laṅ Kuan ...	...
	...	(ii) Tei-shui sz ...
Lunatic Asylum ...	(i) Siau-lang keng ...	...
	...	(ii) Tin-fong ...
Magistracy ...	Po-le ...	Po-lei-sz ...
Marine Office ...	(i) Hai kuan ...	...
	...	(ii) Shun cheng theng

Chinese Characters.	Remarks as to Meaning.
脚拘間	(i) 'Ankle-fetters building.'
監房	(ii) 'Prison-room.'
王家病厝	(i) 'Government sick house.'
老君厝	(ii) 'Doctor's house.'
大醫院	(iii) 'Great medical hall.'
大王厝	(i) 'Governor's house.'
大兵頭住家	(ii) 'Governor's private house.'
呀蘭館	(i) 'Grant Office.'
地稅司	(ii) 'Land tax Official.'
狂人間	(i) 'Mad person's buildings.'
癲房	(ii) 'Mad room.'
保黎	'Police (Court).' (It is said that this name was originally given to the Central Station, which formerly stood where the Court now stands.)
海關	(i) 'Sea office.'
船政廳	(ii) Ship management hall'.

English.	Hokkien.	Cantones.
Municipal Office ...	Kang-po-kek ...	Kung-po-kuk ...
Police Office ...	Toa-kau-thau-e ge-mng	Tai kang-thau nga-mun
Post Office ...	(i) Phue kuan ...	...
	...	(ii) Tai shü-sun kwun
Singapore Railway Station	Hue-chhia thau ...	Fo-chhe thau ...
Supreme Court ...	Toa kok ...	Tai kot ...
Tan Tok Seng's Hospital	(i) Nam-seng hue-hng pi^n	...
	ii) Thia^n-kha keng ...	...
	...	(iii) Lan-keuk kwun ...

Chinese Characters.	Remarks as to Meaning.
工部局	‘Board of works’ office.’
大狗頭之衙門	‘Chief big dog’s office or Chief Inspector’s office.’ (Police officers are apparently all ‘dogs’, for all those above the rank of Sergeant are called ‘big dogs’; the Cantonese use another idiom: ‘foreman’, the same word as is used in speaking of an oveiseer or mandore.)
批館	(i) ‘Letteroffice.’
大書信館	(ii) ‘Big letter-office.’
火車頭	‘Fire-carriage head.’
大咯	‘Big Court.’ (‘Kok’ or ‘Kot’ is not Chinese, but an imitation of ‘Court’.)
南生花園邊	(i) ‘Beside Nam Seng flower garden.’ (Nam Seng was the chop of the Chinaman known to Europeans in Singapore as as Whampoa, *i.e.* Mr. Ho ah Kee C. M. G., former owner of the property known as Bendemeer on Serangoon Road.)
痛脚間	(ii) ‘Sore feet (or legs) building.’
爛脚館	(iii) ‘Broken leg office’.

II Chinese names of country districts

English.	Hokkien.	Cantonese.
1. Alexandra Road ...	(i) Chui-bo lai ...	...
	(ii) Lau-chi kha ...	...
	(iii) Sang khau tia^{n} ...	...
2. Balestier Road ...	(i) Go-cho toa-peh-kong	...
	(ii) O-kio ...	...
	...	(iii) Wu-hap thong ...
3. The Barracks (Tanglin)	Tang-leng peng-pang	Tung-leng peng-fong
4. Bedoh ...	But-lok ...	...
5. Blakang Mati ...	Gia-kang ma-ti ...	...
6. Botanical Gardens...	(i) Ang-mo hue-hng ...	...
	...	(ii) Wong-ka fa-yün...
7. Bukit Timah ...	Be-chhia lo-bue ...	...
8. Chancery Lane ...	Sang-chiau ...	...

in Singapore Island, and the Vicinity.

Chinese Characters.	Remarks as to Meaning.
水磨內	'Within the water (rice) mill.'
嗎子腳	'Foot of the sirih' *i e.* 'near the Sirih gardens.'
雙口鼎	'Two boiling pans'—the 'tia^{n}' is the pan used for boiling gambier—the planters in the Alexandra Road district used two pans instead of one. I suppose there was some difference in the preparation of the gambier.
鷄槽大伯公	'Rochore Temple.'
烏橋	'Black Bridge.'
芋葉塘	'Taro pond.'
東陵兵房	'Tanglin Soldier's rooms.'
勿洛[illegible]	
意荖子池	
紅毛花園	(i) 'European flower-garden.'
王家花園	(ii) 'Government flower-garden.'
馬車路尾	'End of the horse-carriage road.'
雙雀	'Two birds,' referring to the eagles on the gateway of the drive leading to

English.	Hokkien.	Cantonese.
9. Changi ...	Chiang-gi ...	...
10. Chua Chu kang ...	(i) Chua-chu kang ...	...
	(ii) Kang-kia^n ...	...
11. Fort Canning Hill	Ong-ke sua^n ...	Wong-ka shan ...
12. Government Hill	(i) Toa-ong sua^n ...	...
	...	(ii) Peng-thau shan ...
13. Holland Road ...	Hue-hng au ...	...
14. Jurong ...	Yu-long ...	...
15. Kampong Bharu...	(i) Sin kam-kong ...	San kam-pong ...
	(ii) Sin sua^n ...	...
16. Keppel Harbour ...	Sit-lat mng ...	Shek-lat mun ...
	...	Chha-tin ma-thau ...
17. Kranji ...	Ka-lan-ji ...	...
18. Mandi ...	Man-li ...	...
19. Morai ...	Meng-sun kang ...	...

Chinese Characters.	Remarks as to Meaning.
	Mohamed Alsagoff's house at the Thomson Road end of Chancery Lane.
宜章	
港厝蔡	'Chua-chu creek'
仔港	'Little creek.'
山家王	'Government Hill,' as it formerly was.
山王大	(i) & (ii) 'Governor's Hill.'
山頭兵	
後園花	'Behind the flower-garden.'
廊油	
公監新	(i) 'New Kampong.'
山新	(ii) 'New hill or plantation.'
門叻寔	'Singapore gate.'
頭碼甸渣	'Jardine's wharf' *i.e.* the Borneo wharf.'
宜蘭加	
喇萬	
港順明	'Meng-sun creek.'

English.	Hokkien.	Cantonese.
20. Pandan Besar ...	Toa pan lan ...	Tai pan-lan ...
21. Pandan kechil ...	Sio pan lan ...	Siu pan-lan ...
22. Pasir Panjang ...	Hong-heng suaⁿ ...	...
23. Ponggol ...	Phong-hut ...	...
24. Pulau Brani ...	...	San chü-shek tui-min Chha-tin ma-thau tui-min
25. Pulau Obin ...	Chioh-suaⁿ ...	...
26. Pulau Tekong ...	Ti-kong ...	...
27. Selitar ...	Chan-chu kang ...	...
28. Serangoon ...	Au-kang ...	...
29. Serimbun ...	Bu-kho kang ...	...
30. Siglap ...	Gi-lap ...	...
31. Tanjong Gol ...	Tanjong gu-thau ...	...
32. Tanjong Katong...	Ka-tong ...	...
33. Tanjong Rhu ...	(i) Tan-jiong gu ...	...
	...	(ii) Sha-tsui ...

Chinese Characters.	Remarks as to Meaning.
大班蘭	
小班蘭	
豐興山	‘Hong Heng’s plantation.’
帮佛	
新煮錫對面	‘Opposite the new tin smelting.’
渣甸碼頭對面	‘Opposite Jardine’s jetty.’
石山	‘Stone hill.’
地公	
曾厝港	‘Chan-chu creek.’
後港	‘Back creek.’
武可港	‘Bu-kho creek.’
義凹	
丹戎牛頭	
加冬	
丹戎牛	
沙嘴	(ii) ‘Sand spit.’

English.	Hokkien.	Cantonese.
34. Teluk Blanga ...	Sit-lat mng ...	Sai pak mun ...
35. Thomson Road Reservoir ...	(i) Chui-tham thau ...	...
	...	(ii) Tai shúi thong ...
36. Tiong Bharu ...	O-chhai hng ...	...
37. Ulu Pandan ...	Sang-leng ...	...
38. Wayang Satu ...	Toa pa-io ...	...

III. Chinese names of Streets and

1. Bandar Hilir ...	Ban-i-bit ...	Yi-bit ...
2. Bandar Kaba ...	(i) Ban-la ka-ba ...	...
	...	(ii) Khau-chheung kai
3. Blacksmith Street	Kap-pan koi ...	Kap-pan kai ...

Chinese Characters.	Remarks as to Meaning.
西北門	cf. 'Keppel Harbour':—Sai-pak mun means 'north-west gate.'
水氹頭	(i) 'Water pond head.'
大水塘	(ii) 'Big water lake.'
芋菜園	'Taro vegetable garden.'
雙嶺	'Two hills.'
大吧窰	'Big swamp.' Pa-io is the Malay word 'paya' swamp.

Districts in Malacca town.

萬怡蜜	
萬遮加峇	
球場街	ii) "Khau" means 'ball' and "chheung" means 'area' or 'open space' and the name is given because the cricket-ground adjoins the street.
甲板街	It is not clear why the name "Kap-pan street" should be given unless "Kap-pan-kai" is a corruption of or substitute for "Kap-ma kai" which would mean "box street." There are a number of box-makers' shops in the street.

English.	Hokkien.	Canotnese.
4. Bukit China ...	Sam-po chi^n ...	Sam-pau cheng ...
5. Bunga Raya ...	Bong-ga la-ia ...	Mong-nga la-ye ...
6. 1st Cross Street ...	(i) Kit-ling-a koi ...	(i) Kat-leng kai ...
	...	(ii) Pat-chi-lan ...
	(iii) Poh-bian ...	...

Chinese Characters.	Remarks as to Meaning.
三寶井	'Sampo's wells.' (There are wells at the foot of Bukit China and the name of "Sampo's well" is is given to them, because there is a legend, in which the Chinese believe, that a Eunuch of the Ming Dynasty visited Malacca and dug these wells. Similarly the old Fort is called "Sam-po-kong Sia^{n}, 'the fort of Sam-po,' and there are various other names locally connected with the legend of Sam-po's visit.)
望雅嘮耶 吉寧仔街	(i) 'Kling Street.' (The chetties and Kling cloth-shop-keepers live at the northern end of the street.)
八枝蘭	(ii) 'Eight mansions.' (Chi-lan is the name of a flower and 'chi-lan chi shat' means according to Eitel "mansion of brightness and virtue," apparently a complimentary expression. The reason why this name was given is lost in obscurity.)
泊酒	(iii) This name is given to the part near near the landing-place. It is the Malay 'pabeyan' or 'pebiyan' a 'customs-house' or 'wharf' (see Wilkinson's Malay Dictionary.)

English.	Hokkien.	Cantonese.
7. 2nd Cross Street ...	(i) Ku pa-sat ...	(i) Kau pa-sat ...
	(ii) Kiau-keng khau ...	...
8. 3rd Cross Street ...	Hai san kongsi koi ...	Hai san kong sz kai ...
9. 4th Cross Street ...	Chui-sien mng ...	Shui-sin mun ...
10. Goldsmith Street	(i) Kam-kong ke-tek ...	...
	(ii) Kuan-im-teng koi	(ii) Kun-yam teng kai
11. Heeren Street ...	(i) Ho lan koi ..	Ho-lan kai ...
	(ii) Po siah kei ...	...

Chinese Characters.	Remarks as to Meaning.
舊巴虱	(i) 'Old market.'
賭間口	(ii) 'Gambling-house mouth.'
海山公司街	'The Haisan kongsi street.' (The kongsi house of this society once stood in this street)
水仙門	'Water-fairy gate.' (So called, it is said, because there was once a public bathing place here: cf. north Bridge Road, Singapore. One can only grope at the reason why a public bathing place should be called a "water-fairy gate." It is a delightful name anyhow.)
甘光家德	(i) 'Kampong Ketek.' (This is the Malay name.)
觀音亭街	(ii) 'Street of the goddess Kuan-im's temple.' (This is the common Chinese name for the street derived from the large temple in the street.)
荷蘭街	(i) 'Dutch street.' (There were Dutch residences here in the old days.)
寶錫街	(ii) 'Precious metal street.' (This name is not common and I cannot explain the meaning.)

English.	Hokkien.	Cantonese.
12. Java Lane ...	(i) Ma-kau koi ...	...
	(ii) Sin koi ...	(ii) San kai ...
13. Jonker Street ...	Koi tio^n koi ...	Kai chuen kai ...
14. Kampong Pantai...	Kam-kong pan-tai ...	Pan-tai ...
15. Klebang Besar ...	Kit-lai-bong but sat ...	Sai kat-leng-wang ...
16. Klebang Kechil ...	Kit-lai-bong kit-chik	Tai kat-leng-wang ...
17. Kubu Road ...	Ku-bu kak ...	Ku-wu kai ...
18. Mill Road ...	(i) Si-pai po ...	...

Chinese Characters.	Remarks as to Meaning.
馬交街	(i) 'Ma-kau street.' (So called because the Cantonese prostitutes live in the street; cf. Hongkong street, Singapore.)
新街	(ii) 'New Street.' (It is a remarkable coincidence that Campbell street, Penang, Fraser street, Singapore and Java lane, Malacca,—all streets connected largely with houses of ill fame—are all known to Chinese as 'new street.')
圭場街	(i) 'Cock-pit street.' (So called because a cockpit 'glangang' used to exist here.)
甘光班底	'Kampong Pantei,' *i.e.*, the village on the shore. (The Chinese have simply adopted the local name. The name is also applied to the adjoining ends of 2nd and 4th Cross streets.)
吉黎夢勿殺 吉黎夢吉疾	(The Hokkiens use transliterations of the Malay name, but the Cantonese translate into 'Big' and 'Little' Klebang.
龜務角	'Kubu corner.' 'Kubu street.'
四牌埔	(i) 'Sepoys' plain.' (The sepoys' barracks were formerly in this street.)

English.	Hokkien.	Cantonese.
	(ii) Sin pa-sat ...	(ii) San pa-sat ...
	(iii) Sa-kak po ...	...
19. Riverside ...	(i) Ho-lan chhiu kha ...	...
	...	(ii) Tai-chung kai ...
	(iii) Pa-sat khau ...	...
	(iv) Sin koi au ...	(iv) San kai hau pin ...
20. Trangkerah ...	Tang koi lak ...	Tong kai la ...

Chinese Characters.	Remarks as to Meaning.
新巴虱	(ii) 'New market.' (The new Municipal market is close by.)
三角埔	(iii) 'Three-cornered plain.' (There is a triangular bit of land here used as a vehicle-stand)
荷蘭樹脚	(i) 'Foot of the Dutch trees.' (The Dutch trees are the 'sena' trees which were probably introduced by Dutch.)
大鐘街	(ii) 'Big bell street.' (This refers to the clock tower.)
巴虱口	(iii) 'Market-mouth.' (Riverside is a long street and has various names in various parts. This name is given to that part near the fish-market.)
新街後	(iv) 'Behind Java Lane.'
東街蚋	

IV. List of towns and villages in Negri Sembilan.

English.	Chinese.	Characters.	Remarks.
District of Seremban.			
1. Ampangan ...	Tan-yung ...	旦容	
2. Batang Benar	Pa-tang man-long	吧燈文浪	
3. Batang Labu	Ma-tang la-wu	傌燈嗱烏	
4. Binjei ...	Min-ye ...	綿爺	
5. Broga ...	Wu-leng-ngan ...	湖靈眼	
6. Bukit Putus...	Bu-kit Phu-tok	武吉浮禿	
7. Bukit Tangga	Bu-kit tang-nga	武吉東雅	
8. Bukit Jelotong	Bu-kit yü-lo-tong	武吉魚羅東	
9. Chedang ...	Chin-tang ...	珍燈	
10. Gadut ...	Kwa-tu ...	瓜都	
11. Gebok ...	Ngai-mok ...	蟻莫	
12. Gedang Lalang	Su-mau piang ...	蘇茅坪	
13. Klambu ...	Ka-lam-bu ...	架林武	
14. Kuala Sawah	Kwa-la sa-wa ...	掛嗱沙華	
15. Kuala Parit	Kwa-la ma-ngit	掛嗱馬熱	

English.	Chinese.	Characters.	Remarks.
16. Lenggeng ...	Song-po ...	宋波	
17. Liat ...	Fo-che thau ...	火車頭	
18. Limbok ...	Lian-mok ...	連莫	
19. Linsum ...	Leng-sam ...	羚森	
20. Lobak ...	Lo-mak ...	羅脈	
21. Mantin ...	San sa-tu ...	新沙都	
22. Membah ..	Man-ma ...	萬峇	
23. Merabah ...	Mit-ya-ma ...	物也峇	
24. Nendol ...	Mit-tu ...	蜜都	
25. Pantai ...	Pan-tei ...	板低	
26. Paroi ...	Pa-mi ...	傌尾	
27. Pengkalan Kempas	Leng-gi kong-hau	鄰宜港口	
28. Perhentian Tinggi	Ship-thiu shak...	十條石	
29. Permatang Pasir	Pa-ma-tang pa-sia	巴嗎燈巴賒	
30. Rahang ...	Thin-khau mi ...	田溝尾	

English.	Chinese.	Characters.	Remarks.
31. Rantau ...	An-tau ...	晏斗	
32. Rasak ...	Ah-sa ...	亞沙	
33. Senaweng ...	Lok thiu shak...	六條石	
34. Seremban ...	(i) Sai-lam-ban	西林閩	
...	(ii) Fu-yong ...	芙蓉	
35. Setul ...	Lo-sa-tu ...	老沙都	
36. Sikamat ...	Sio kam-mit ...	小甘蜜	
37. Siliau ...	Sai-liau ...	西料	
38. Sungei Pajam	Kong sang san-kai-cheong ...	廣生新街場	
39. Sungei Raia	Sin-kai la-ya ...	新街嗱也	
40. Tampin Ling-gi	Tam-pin leng-gi	淡邊鄰宜	
41. Tanjong Ipoh	Tan-yong I-po...	丹蓉億波	
42. Temiang ...	Cham-yong-thau	沉香肚	
43. Terachi ...	Ti-la-chi ...	地嗱知	
44. Ulu Bernang	Bu-lau ...	武盧	

English.	Chinese.	Characters.	Remarks.
District of Kwala Pilah.			
1. Batang Jelai...	Pa-tang ya-nai	巴登也乃	
2. Batu Bersawa	Pa-tu bet-sa-wa	巴都勿沙華	
3. Belombong ...	Man-long-wong	文隆黃	
4. Beting ...	Mit-ting ...	蜜丁	
5. Bukit Limpit	Tai-pak-kong san	大伯公山	
6. Johol ...	Yu-ho ...	由河	
7. Juaseh ...	Yen-ah-sia ...	源亞賒	
8. Junapoh ...	Yu-ma-po ...	由麻坡	
9. Kumoi ...	Ku-moi ...	咕每	
10. Kwala Gantam	Kwa-la ngan-tam	掛嚕眼擔	
11. Kwala Jempol	Kwa-la cham-bu	掛嚕占武	
12. Kwala Pilah	Pei-la ...	吡嚕	
13. Langkah ...	Lang-kap ...	浪鴿	
14. Pasoh ...	Pa-sia ...	吧賒	
15. Plangai ...	Bu-lo-ngai ...	武羅蟻	

English	Chinese.	Characters.	Remarks.
16. Prigi Jerneh	Pi-lei-ngi ...	吡哩宜	
17. Rengo ...	Leng-ngo ...	羚莪	
18. Rompin ...	Lam-pin ...	林邊	
19. Saki ...	Sa-ki ...	沙幾	
20. Selaroo ...	Sa-la-lo ...	沙嘮羅	
21. Senalin ...	Chin-chi-len ...	陳致連	
22. Serting ...	Si-lo-teng ...	四羅丁	
23. Tebing Tinggi	Thung-pin teng-ngi	同邊丁宜	
24. Terentang...	Ti-lan-tang ...	地蘭登	
25. Ulu Jelai ...	Wu-lu ya-nai ...	烏路也乃	
26. Ulu Muar ...	Wu-lu cham-ma	烏路占馬	

District of Tampin.

English	Chinese.	Characters.	Remarks.
1. Ayer Kuning	Ah-ek ku-lin ...	亞益咕連	
2. Batang Malaka	Pa-tang ma-lak-kah	把登嗎𠯈呷	
3. Bongek ...	Mong-yit ...	望熱	

English.	Chinese.	Characters.	Remarks.
4. Chenong	Chiu-long	賤籠	
5. Chindras	Chin-ya-la	賤也嘮	
6. Gemencheh	Nga-man-che	雅文姐	
7. Jeram	Yit-lam	熱林	
8. Kampong Batu	Kam-pong Pa-tu	金榜把都	
9. Kendong	Kan-tung	根洞	
10. Keru	Ka-lu	加路	
11. Kuala Gemas	Kua-la kam-bu	掛嘮禁武	
12. Kundor	Kin-chung	見鐘	
13. Linggi	Lin-ngi	鄰宜	
14. Lobok China	Lo-mok chin-na	羅莫賤嘮	
15. Makunyit	Ma-ku-yit	嗎古熱	
16. Mantai	Man-thai	文梯	
17. Pedas	Mun-ta	門咑	
18. Pengkalan Durian	Peng-ka-lan lo-lin	兵架蘭老連	

English.	Chinese.	Characters.	Remarks.
19. Prigi Teren-tang	Pi-la ti-lan-tang	毗嗱地蘭[illegible]	
20. Rembau ...	Lam-mau ...	林茂	
21. Repah ...	Lam-pa ...	林把	
22. Salak Aamah	Sa-lat lo-pak ...	沙叻羅白	
23. Sompang Linggi	Seng-pang lin-ngi	性邦鄰宜	
24. Tampin ...	Tam-pin ...	淡邊	
25. Tebong ...	To-bong ...	多黃	
26. Tanjong Kling	Tan-yong kat-leng	丹蓉吉寧	
District of Port Dickson.			
1. Arang Arang	Ah-lang ah-lang	亞冷亞冷	
2. Bagan Pinang	Ma-ngan mi-neng	嗎銀味寧	

English.	Chinese.	Character.	Remarks.
3. Chuah ...	Chho-nga ...	初雅	
4. Jimah ...	Ye-mok ...	夜莫	
5. Kwala Lukut	Chi-wo kong-hau	致和港口	
6. Labuan Belik	La-pan mi-leh...	啍班咪叻	
7. Lukut ...	Lu-kwat . .	路骨	
8. Pasir Panjang	Pa-sia pan-yeng	把賒板影	
9. Port Dickson	Po-tak-sun ...	波德伸	
	Pu-lo a-lang ...	布羅亞[illegible]	
10. Pulau Babi	Pu-lo ma-mi ...	布羅馬味	
11. Pulau Bajudi	Bu-lo bu-chi-ti	無羅武致支	
12. Semdayan ...	Chin-ta-yin ...	賤打煙	
13. Sempang ...	Si-pong ...	四邦	
14. Siginting ...	Si-ngan-teng ...	四銀丁	
15. Si Rusa ...	Si lo-sa ...	四路沙	
16. Tanah Merah	Chi-wo kong ...	致和港	
17. Tanjong Gemok	Tan-yong ye-mok	丹蓉夜莫	

English.	Chinese.	Character.	Remarks.
18. Telok Kemong	To-lo kam-pong	哆羅金邦	
District of Jelebu.			
1. Gunong Hantu	Khu-tung an-tu	古洞晏都	
2. Jelebu ...	Ngi-lok-wu ...	宜⿰日六胡	
3. Jerang ...	Yi-lang ...	魚冷	
4. Kenaboi ...	Kha-la-moi ...	咖嘮美	
5. Kongoi ...	Kong-ngo ...	江莪	
6. Kwala Klawang	Hung-mo-lau ...	紅毛樓	
7. Peradong ...	Pa-tung ...	吧洞	
8. Pertang ...	Bu-lo-tang ...	武羅燈	
9. Semada ...	Seng kah lo-nga	星架羅雅	
10. Sungei Kepong	Chim-ma-la ...	占馬嘮	
11. Titi ...	Ti-chi kong ...	地支港	
12. Titi Petalling	Ti-chi ku-ta-lin	地支古打鄰	

V. Chinese names of

English.	Hokkien.	Cantonese.
1. Atok	A-tok	A-tuk
2. Batu Talam	Ba-tu ta-lam	Ma-to ta-lam
3. Batu Yon	Ha-tu yan	Wa-to yin
4. Bentong	Bun-tong	Man-tung
5. Budu	Kwu-lu	Wu-lu
6. Bukit Fraser	Peh-chhiu kang	Pak-su kong
7. Bukit Itam	Bu-kit i-tam	...
	...	Shim-pan
8. Bukit Koman	Bu-kit ko-ban	...
	...	Shim-pan
9. Bukit Telaga	Jih-si tiu	Ya-sz pei

places in Pahang.

Chinese Characters.	Remarks as to Meaning.
亞篤	
峇都藍打	
華都燕	
文冬	Also known as "Wun-tong."
湖盧	
白鬚港	'White beard's mining land' (so called after Mr. Fraser the original proprietor of the concession now worked by the Sempam Mining Company. Mr. Fraser had a long white beard).
武吉逸淡	The Hokkiens use the Malay name, but the Cantonese call this place as well as Bukit Koman 'Shim-pan' or 'Shim-pan kim wo' the Sempam underground mine. The Sempam river makes a loop in the direction of these places, though it is about two miles off at the nearest point.
暹板	
武吉高闆	
暹板	(See under Bukit Itam above.)
廿四碑	'Twenty four stones' *i.e.* 24 miles from Kwala Kubu on the old bridle path. It is 29 miles distant by the new trunk road.

English.	Hokkien.	Cantonese.
10. Burau	Mo-lai or Po-lai	Po-lai
11 Chamang	Sam-meng	Sham-mang
12 Cheka	Chek-kau	Chek-ko
13 Durian Sabatang	Liu-lian si-ba-tang	Lau-lin sz-ma-tang
14 Gali	Ga-li	Nga-lei
15 The Gap	Jih-it tiau	...
	...	Fan shui au
16 Goa	Go	Ngo
17 Kechau	Kit-chhiu	Kat-chhau
18 Kelola	Kia-lo-la	Kei-lo-la
19 Kuala Lipis	Lip-pi	Lip-pei
20 Kuala Medang	Kua-la mian-teng	Kua-la min-teng
21 Kuala Tembeling	Kua-la tan-bi-ling	Kua-la tün-pok-lin
22 Kuantan	Kuan-tan	Kwan-tan
23 Panggong	Mang-kang	Phang-kong

Chinese Characters.	Remarks as to Meaning.
布黎	
岑孟	
卽高	
流連四峇登	
牙利	
廿一條	'Twenty one mile stones' *i.e.*, from Kwala Kubu.
分水凹	The Cantonese name means.
鵝	
吉洲	
寄羅鐳	The character for the third syllable is 'lui' not 'la'.
立卑	
哇拉兔丁	
哇拉叚卜連	The characters do not represent the Hokkien sounds.
關丹	
崩江	

English.	Hokkien.	Cantonese.
24 Pedah ...	Mun-ta ...	Man-ta ...
25 Pekan ...	Peh-kan ...	Pak-kan ...
26 Perting ...	Po-li-teng ...	Po-lei-teng ...
27 Pulau Tawar ...	Phu-lo ta-koa ...	Fu-lo ta-wa ...
28 Raub ...	Lah-ut ...	Lah-wut ...
29 Sega ...	Su-ga ...	Sz-nga ...
30 Selensing ...	Su-leng-seng ...	Sz-ling-seng ...
31 Semantan ...	Su-mian-tan ...	Sz-man-tan ...
32 Sempam ...	Sim-pan ...	Shim-pan ...
33 Sepan ...	Chioh-pan ...	Shak-pan ...

Chinese Characters.	Remarks as to Meaning.
問打	
北根	
波匣頂	The name refers to the district where the Perting River joins the Bentong River and especially to the mine owned by the Tong Shun Kongsi.
湖盧打哇	
勝活	
士牙	
士零星	
士免丹	Semantan Ulu though a different place is similarly named.
蟾賓	The Chinese name is used for all that part of the district on the Sempam river between the lower part of Mr. Fraser's concession and the point where it flows into the River Semantan Ulu.
石班	

English.	Hokkien.	Cantonese.
34 Sungei Lembing ...	Lim-beng ...	Lam-meng ...
35 Tanjong Besar ...	Tan-yong ..	Tan-yung mut-sat ...
36 Tanom ...	Tan-lim ...	Tan-lam ...
37 Tebing Tinggi ...	Ti-peng ...	Tei-peng ...
38 Telang ...	Tok-leng ...	Tuk-lung ...
39 Tembeling ...	Tan-bi-ling ...	Tün-puk-lin ...
40 Tranum ...	Bun-tong-khau ...	Man-tung hau ...
41 Tras ...	To-lai ...	To-lai ...
42 Tui ...	Tui ...	Tui ...
43 Ulu Dong ...	Long ...	Lung ...
44 Ulu Jelai ...	O-lo jit-lai ...	Wu-lo yat-lai ...
45 Ulu Tembeling ...	O-lo tan-bi-ling ...	Wu-lo tün-puk-lin ...

Chinese Characters.	Remarks as to Meaning.
林明	
丹容抹殺	
丹林	
地泳	
獨龍	
叚卜連	The characters do not represent the Hokkien sounds.
文冬口	'Bentong mouth.'
都蘆	
堆	The character in Cantonese is pronounced 'thui'.
隆	
湖盧日黎	
湖盧叚卜連	See under Tembeling above,

VI Chinese names of places in Perak.

English.	Chinese.	Characters.	Remarks.
Bagan Serai	Ma-ngan sek-hoi	馬登色海	The name is phonetic. The Tiechius call it 'Ma-tang sek-hai.'
Batu Gajah	Wa-tu nga-ye	華都呀爺	
Bidor	Mi-lo	美羅	
Chemor	Chü-mo	朱毛	
Chenderiang	Chek-ngo-yeng	積莪營	
Enggor	Leng-lo	玲羅	
Gopeng	Mo-pin	毛邊	
Guntong	Sz-wui-kai	四會街	*i.e.* the street or place where people from the Sz-wui district of the Kwangtung province live. Similarly Macao is called O-mun kai; and I have heard Taipeng called Thaipeng kai by new arrivals.
Ipoh	Pa-lo	埧羅	This is the name by which the Kheh and Cantonese Chinese have always called Ipoh. Mr. W. D. Barnes informs me

English.	Chinese.	Characters.	Remarks.
			that formerly there were two Kampongs, one called Ipoh and the other Paloh. In Wilkinson's Dictionary Paloh is given as meaning "a hollow filled with stagnant water" while 'Ipoh' means 'upas-tree'. The Europeans and Hokkien Chinese called the town which was subsequently built, *Ipoh*, while to the Cantonese and Khehs the place became known as *Pa-lo*.
Kampar ...	Kam-po ...	金寶	
Kampong Kepayang	Kam-pong Panyang	金榜班映	
Kamunting ...	San-kong-mun	新港門	*i.e.* New district. This name was given by the Chinese to Kamunting because mines were opened there later than near Taipeng. Kamunting is about 3 miles from Taipeng.

English.	Chinese.	Characters.	Remarks.
Kinta ...	Tai-phek-lik ...	大吡叻	*i.e.* Big Perak, as distinct from Larut which is *Siu-phek-lik* or little Perak. The Tiechius call it Toa-pe-lak.
Kota ...	Ku-ta ...	古打	
Kota Bahru ...	Ku-ta ma-lu ...	古打馬路	
Krian ...	Ko-yin ...	高煙	This name is also applied to Nibong Tebal in Province Wellesley.
Kuala Kangsa...	Phu-lo kong-sau	浮勞江秀	
Kuala Dipang...	Mi-phang ...	美棚	
Kurau ...	Ku-lau ...	古樓	
Lahat ...	Na-hat ...	拿乞	
Larut ...	Siu-phek-lik ...	小吡叻	The Tiechius call it 'Sio-pe-lak', and this is more nearly the sound of the characters.

English.	Chinese.	Characters.	Remarks.
Matang ...	Ma-tang ...	馬登	
Padang Rengas	Siu-san ...	燒山	Burning hill, because lime stone used to be burnt here for lime.
Papan ...	Kap-pan ...	甲板	
Parit Buntar ...	Ko-yin ...	高煙	*Ko-yin* is simply Krian; another name is *sin-ba-lai* meaning the new 'balai' or Police Station, in distinction to that at Nibong Tebal over the border.
Polai ...	Po-lai ...	賴	
Pusing ...	Pu-sing ...	布星	
Salak ...	Sha-lak ...	沙叻	
Selama ...	Sü-lam-ma ...	絲南孖	

English.	Chinese.	Character.	Remarks
Selibin ...	Süt-li-ping ...	雪厘冰	
Siputeh ...	Pu-tei ...	步地	
Slim ...	Su-lam ...	土林	
Sungei Raia ...	Sung-kai la-ye	雙溝鯙爺	
Sungei Siput ... (near Kuala Kangsar)	Wo Fung kai-cheung	和豐街場	'Wo Fung' was a big mining kongsi here: Kai-cheung means 'town' or more literally 'street-area.'
Sungei Siput ... (near Kampar)	Shek-san-keuk	石山脚	'The foot of the (lime) stone hill.' The mines are at the foot of a limestone cliff.
Sungkai ...	Süng-khai ...	宋溪	
Taipeng ...	Thai-peng ...	太平	Also Phek-lik-tsai.
Tambun ...	Tam-mun ...	淡問	

English.	Chinese.	Characters.	Remarks.
Tanjong Malim	Phu-lo on-nam	浮勞安南	Phonetic, probably from some Malay name. (? Pulau Anam.)
Tanjong Rambutan	Hung-mo tan ...	紅毛丹	This is usual Chinese for the Rambutan fruit. Hung-mo or ang-mo red-haired, so the Chinaman has been happy in his choice of of a name for this fruit.
Tapah ...	Ta-pa ...	打巴	
Tekka Menglembu	Man-li-mong ...	萬里望	
Teluk Anson ...	Sz-ma-tang ...	司馬登	This is the Chinese version of Sa'batang. The old port was Durian Sa'batang 3 miles from the present town, the Chinese however still use the old name. I have heard *An-sun* used on a few occasions.
Temoh ...	Luk-chi-pei ...	六枝碑	*i.e.* Six mile-stones, because Temoh is six miles from Kampar on the road to Tapah.
Tronoh ...	Tun-lok ...	端洛	

VII. Chinese names of places in Selangor.

English.	Chinese.	Characters.	Remarks.
Ampang ...	Om-pang ...	暗邦	The village between the 3rd and 4th milestones on the Kuala Lumpur Ampang road is Pun-kong, *i.e.*, 'the half way mines,' or, 'the mines half-way between Ampang and Kuala Lumpur.'
Bangi ...	Man-yi ...	萬宜	The Hokkiens call it Ban-gi.
Batang Benar ...	Pat-tang mei-na	八登尾拿	
Batu ...	Wa-tu ...	華都	
Batu Tiga ...	Sam thiu shek ...	三條石	*i.e.* three (mile)-stones, because Batu Tiga is 3 miles from Damansara, where sam-pans discharged cargo in pre-railroad days.
Beranang ...	Fu-lu-ngan ...	芙蘆奀	This name is also applied indiscriminately to some other places in the same district, *e.g.*, Blau and Broga. It is apparently phonetic.

English.	Chinese.	Characters.	Remarks.
Bukit Raja ...	Mu-kit La-ye ...	毛結鏬爺	
Cheras ...	Chui-lai ...	蕉賴	
Gombak ...	Ngo-mak ...	鵝墨	
Jeram ...	Yi-lam ...	宜冧	
Jugra ...	Chho-ka-la ...	粗加鏬	
Kajang ...	Ka-yeng ...	架影	
Kanching ...	Kan-ching ...	間征	
Kapor ...	Ka-pa ...	加吧	
Kelumpang ...	Lung-pong ...	龍邦	
Kepong ...	Kap-tung ...	甲洞	
Kerling ...	Kat-lin ...	吉粦	
Klang ...	Pa-sang ...	吧生	Because the Malays give the name 'Pasang' to part of the town of Klang.
Kuala Kubu ...	(i) Kwu-mo ...	古毛	
	(ii) Sz-Nga-Ngok	師牙岳	*i.e.* Selangor in Cantonese guise. Kuala Kubu is the principal town in Ulu Selangor, and the Chinese have

English.	Chinese.	Character.	Remarks.
			adopted the name of the district, and dropped the 'Ulu.'
Kuala Langat ...	Nga-ngat kong-hau	牙兀港口	*i.e.* the mouth of the 'Nga-ngat river.' Nga-ngat=Langat obviously.
Kuala Lumpor	Kat-lung-po ...	吉隆坡	I have also often heard kai-(or ka-) lam-po.
Kuala Selangor	Sek-a-ngo kang-khau	昔仔午港口	These are Hokkien sounds, representing 'mouth of the river Selangor.'
Kuang ...	Kuang ...	轟	
Kuchai ...	Ku-tsai ...	古仔	
Kuyau ...	Kɔ-yu ...	高腰	
Padang Jawa ...	Pat-tang chiau-a	八登爪亞	
Pantai ...	Pan-tai ...	板底	
Parit Tengah ...	Pa-lit Teng-a ...	吧列丁亞	
Pasir Panambang	Pa-sa Pan-lam-pang	吧沙板冧崩	
Pasir Panjang...	Pa-sa Pan-yeng	吧沙板影	
Pĕtaling ...	Ku-ta-lin ...	古打粦	

English.	Chinese.	Character.	Remarks.
Port Swettenham	Pa-sang kong-hau	吧生港口	See Klang 'Kong-hau' means 'river mouth.'
Pudoh ...	Pun-shan pa ...	半山吧	*i.e.* half (way to the jungle.
Pulau Ketam ...	Po-lau kit-tam...	布流結系	
Rasa ...	Lak-sü ...	叻思	(in Hokkien) Rasa is in Ulu Selangor, and this part of Selangor was proved by the census to be the 'Hokkien' part of the State—so the Chinese name of the place was a Hokkien name.
Rawang ...	Man-lau ...	橈萬	This may be for 'Bandar': part of Rawang is known as Bandar Bharu.
Salak (South) ...	Ku-ta-lin Sa-lak	古打粦沙歷	
Selangor ...	Sz-nga-ngok ...	師牙岳	Most commonly by residents outside the State called 'Kit-lang' (Klang)

English.	Chinese.	Character.	Remarks.
	Sut-lang-ngo ...	雪蘭鵝	
	Kit-lang ...	吉冷	
Sĕmunyih ...	Sz-wai-yik ...	四圍益	This is the recognised written name. It means "lucky all round.' The colloquial is 'Sz-man-yik.'
Sĕpang ...	Chi-wo kong ...	致和港	'Kong' is a river, and 'Chi wo' is the chop of a gambier and pepper Kongsi, the largest in that district.
Serdang ...	Sa-tang ...	沙戥	
Sĕrendah ...	Seung-man-tan	雙文丹	Sometimes called 'Sz-man-tan. The river at this place is called Sungei Sĕmantan.
Sĕtapah ...	Man-lung-kong	文龍港	I have not been able to ascertain the explanation of this name. It may have some connection with the name of a small river there called 'Sungei Bilong.'

English	Chinese.	Character.	Remarks.
Simpah ...	San-pa ...	新吧	
Sungei Ayer Itam	Sung-koi A-yi yi-tam	宋溪亞耶意氹	
Sungei Besi ...	San-kai-cheung	新街場	*i.e.* New town. Kai=street, cheung=open space—so that Kai cheung appears to mean 'street area' and so 'town.' It is not the usual form of expression. Sungei Besi got this name, because the locality of the town was changed some years ago.
Sungei Buloh ...	Sung-khoi Phu-lo	宋溪蒲蘆	
Sungei Dayong	Sung-khoi Na-yung	嵩溝拿容	
Sungei Puteh ...	Sung-khoi Phu-thai	宋蟻菩提	
Sungei Tempaian	Sung-khoi Tam-pa-yeng	宋溝担霸影	
Sungei Way ...	Sung-khoi Wai	雙溝威	
Tanjong Karang	Tan-yeung ka-lang	丹洋架冷	

English.	Chinese.	Characters.	Remarks.
Tanjong Malim	Fu-lo On-nam or Phu-lo On-nam	芙蘆安南 郭蘆安南	This sounds like an adaptation of a Malay name meaning 'sex Islands'. But there is no authority for that, and it is not unlikely tnat it is a Chinees attempt at 'Ulu Bernam.'
Ulu Klang ...	Tham-kong ...	淡江	*i.e.* Dull-mine—Dull in the sense of not prosperous. The miners here met with little luck. But more probably another explanation is correct, *viz.* that the water of the river at Ulu Klang was much used for drinking purposes, 'tham' here meaning 'fresh.'
Ulu Langat ...	Nga-ngat shan...	牙兀山	'Shan' practically corresponds to 'Ulu'—up-country.
Ulu Selangor ...	U-lau Süt-lang-ngo	烏咾雪蘭莪	See under Kuala Kubu.
Ulu Yam ...	Wa-tu- a-yam ...	華都亞音	There is said to be a rock (batu) which serves as a landmark.

VIII. Chinese names of places most of which have commercial or other connections with the Straits Settlements.

English.	Hokkien.	Cantonese.	Character.
Acheen	A-che	Che-fau	亞齊
America[1]	Bi-kok	Mei-kwok	美國
	Hue-ki-kok	Fa-khei-kwok	花旗國
Amoy	E-mng	Ha-mun	厦門
	E-mui	...	廈門
Annam	An-nam	On-nam	安南
Australia[2]	Sin-kim-suaⁿ	San-kam-shan	新金山
Austria	O-kok	O-kwok	奥國
Bangkok[3]	Bong-kok	Mang-kok	網咯
	Siam-kiaⁿ	...	暹京
Batavia[4]	Ka-la-pa	Ka-la-pa	加勝巴
	Ba-tau-i	...	目投夷
Batu Pahat	Ba-tu Pa-hat	Ma-tu-pa-hat	峇楮吧轄
Bombay	Bong-bai	Mang-mei	望眉
Borneo	Bo-nioⁿ	Mu-neung	慕娘

1. Hue-ki-koh means 'flowery flag country.'
2. Sin-kia-suaⁿ means 'New gold fields' as distinct from California.
3. Siam-kiaⁿ means 'Capital of Siam.'
4. Ka-la-pa may be for the Malay word 'Kelapa,' coconut.

English.	Hokkien.	Cantonese.	Character.
Calcutta ...	Beng-ka-la ...	Mang-ka-la ...	孟加臘
	...	Ka-lei-kat-ta ...	加剌吉打
Canton[5] ...	Kng-tang ...	Kwong-tung ...	廣東
	Se^{n}-sia^{n} (Tiechiu)	Shang-sheng ...	省城
Cheribon ...	Che^{n}-li-bun ...	Cheng-lei-man...	井里汶
Chifu (or Chefoo)[6]	Ian-tai ...	Yin-thoi ...	烟台
China ...	Tong-kok ...	Chung-kwok ...	中國
	Tng-sua^{n} ...	Thong-shan ...	唐山
Christmas Island[7]	Ka-su ma-su ...	...	嘉士嗎嶼
	...	Shek-tsai-fau ...	石仔埠
Cocob ...	Ku-kok ...	Ku-kok ...	龜咯
Colombo ...	Ko-long-bo ...	Ko-long-mo ...	高浪霧

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5. Se-sia-means 'provincial capital'—This is the expression invariably used by Tiechius—while Cantonese use the equivalent 'Shang Sheng.' In the same way 'hu-sia^{n}' will be used by the people of a prefecture to denote their prefectural city.

6. 'Smoky fort.' 'Yin Thoi' is really the name of the foreign concession' on the opposite side of the harbour to the Chinese town of Chi-fau 芝罘 and the name given to the site of the foreign concession has ousted the real name of the place.

7. 'Shek-tsai-fau' means 'Little stone port', alluding to the phosphate work.

English.	Hokkien.	Cantonese.	Character.
Corea ...	Kau-li-kok ...	Ko-lai kwok ...	高麗國
	Ko-le kok ...	...	
Cuba ...	Ko-pa ...	Ku-pa ...	古吧
Deli ...	Jit-li ...	Yat-lei ...	日裡
	Jin-li ...	...	
Dindings[8] ...	Pang-kok ...	Pong-kok ...	邦咯
Edie ...	I-li ...	Yi-lei ...	怡里
England ...	Eng-kok ...	Ying-kwok ...	英國
Foochow ...	Hok-chiu ...	Fuk-chau ...	福州
Formosa[9] ...	Tai-wan ...	Thoi-wan ...	台灣
France ...	Ho-lan-se ...	Fat-lan-sai ...	法蘭西
	Huap kok ...	Fat-kwok ...	法國
Germany ...	Tek-kok ...	Tak-kwok ...	德國
Haiphong ...	Hai-pong ...	Hoi-fong ...	海防
Hoihow ...	Hai-khau ...	Hoi-hau ...	海口

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[8] 'Pang-kok' is Pangkor, the island and village at the mouth of the Dindings river.

[9] 'Tai-wan' is the Chinese name, meaning 'Terraced bay.'

English.	Hokkien.	Cantonese.	Character.
Holland ...	Ho-lan ...	Ho-lan ...	荷蘭
Hong Kong ...	Hiang-kong ...	Heung-kong ...	香港
India[10] ...	In-to ...	Yan-to ...	印度
	Kit-ling-a tso ke (Colloquial Tiechiu)	...	吉寧仔祖家
Italy ...	I-tai-li ...	Yi-tai-lei ...	意大利
Japan ...	Jit-pun ...	Yat-pun ...	日本
Jelebu ...	Jia-li-bu ...	Ya-lei-mu ...	惹裡務
Johor[11] ...	Yu-hut ...	Yau-fat ...	柔佛
	Sin-sua^n ...	San-shan ...	新山
	Ja-ga (Tiechiu)...	...	惹呀
Karimon ...	Ka-li-mun ...	Ka-lei-mun ...	家里汶
Kedah ...	Kit-ta ...	Kai-ta ...	吉打
Kelantan ...	Kit-lan-tan ...	Kat-lan-tan ...	吉蘭丹
Kopah ...	Ko-pa ...	Ko-pa ...	高吧

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[10] 'Kit-ling-a tsou-ke' means 'Klings' home' : it is of course only colloquial.

[11] 'Sin-sua' means 'New hills' or 'New country,' distinguishing ohor, I suppose, from Singapore.

English.	Hokkien.	Cantonese.	Charactei.
Labuan ...	La-buan ...	La-mun ...	納閩
Langkat ...	Lang-kat ...	Lang-kat ...	籠葛
Langkawi ...	Phu-lo kau-ui ...	...	浮羅交夷
Lingga ...	Leng-ge ...	Lung-nga ...	龍牙
Malacca ...	Mua^n lak-kah ...	Ma-lak-kak ...	麻吠呷
Macao [12] ...	O-mng ...	O-mun ...	澳門
	...	O-mun-kai ...	澳門街
Macassar ...	Mang-ka-siah ...	Mang-ka-sat ...	望加錫
Manila ...	Sio-lu-song . .	Siu-lui-sung ...	小呂宋
Medan [13] ...	Sa-wan ...	Sha-wan ...	沙灣
Mergui [14] ...	Tan-lau ...	...	丹荖
	...	Tai-lau ...	大栳
Moulmein ...	Ma-tang-lien ...	...	峇淡棉
	...	Mu-lu-min ...	毛勞棉

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[12] 'O-mun' is the Chinese name for the place known to Europeans as Macao.

[13] Medan is known to Chinese as 'Sawan' meaning 'Sand bay.'

[14] 'Tan-lau' means 'Red Sirih.' I have not been able to ascertain the reason for this name.

English.	Hokkien.	Cantonese.	Character.
Muar ...	Muaⁿ-po ...	Mo-fau ...	蔴埠
Muntok ...	Bun-to ...	Man-to ...	文島
Negri Sembilan[15]	...	Kau-chau-fu ...	舊州府
Olehleh [16] ...	A-che ...	Che-fau ...	亞齊
Padang ...	Toa-pa-tang ...	Tai-pa-tang ...	大吧冬
Pahang ...	Pang-hang ...	Pang-hang ...	彭亨
Pakhoi ...	Pek-hai ...	Pak-hoi ...	北海
Pangkor ...	Pang-kok ...	Pong-kok ...	邦咯
Palembang [17] ...	Ku-kang ...	Kau-kong ...	巨港
Pekin ...	Pak-kiaⁿ ...	Pak-keng ...	北京
Penang[18] ...	Pin-nng-su ...	Pun-long-yü ...	檳榔嶼
		Pei-nang ...	庇能
		San-fau ...	新埠
Perah ...	Peh-lak ...	Phek-lek ...	吡叻

---

[15] 'Kau-chau-fu' is only a translation of Negri Sembilan. The name 'Fu Yung' *i.e.* (Sungei) Ujong is usually given to Negri Sembilan and all that part of the Peninsula.

[16] This is 'Atjeh', the Dutch name of Acheen, in Chinese form.

[17] 'Ku-kang' means 'great river.'

[18] 'San-fau' means 'New town :—Penang was later known to Cantonese, than Singapore.

English.	Hokkien.	Cantonese.	Character.
Perlis [19] ...	Ka-yang ...	Ka-yang ...	加央
Pontianak ...	Khun-tian ...	Khwan-tin ...	坤甸
Pulo Bĕrandan [20]	...	Fo-shui shan ...	火水山
	But-lan-tan ...	...	勿輦輦
Rangoon ...	Liang-kong ...	Yeung-kwong ...	仰光
	Ang-kong ...	On-kung ...	晏光
Renong ...	Lin-long ...	...	粦廊
Rhio ...	Liau-lai ...	Liu-noi ...	廖內
Russia ...	Go-lo-su ...	Ngo-lo-sz ...	俄羅斯
Saigon ...	Sai-kong ...	Sai-kung ...	西貢
Samarang ...	Sam-pa-lang ...	Sam-pa-lang ...	三吧壟
Sandakan ...	Sin-ngia-kan ... San-ta-kan ... Siang-hia kang	... San-ta-kan	山打根
Sandwich I'ds [21] ...	Toaⁿ Hiong Suaⁿ	Than-Heung shan	檀香山
San Francisco [22]	Ku kim-Suaⁿ ...	Kau-kam-shan	舊金山

[19] 'Ka-yang' is apparently the Malay 'Ka-jang.' I know no explanation of the name.

[20] Kerosine-oil hills.

[21] 'Sandalwood hills'.

[22] 'Old gold diggings' as distinct from Australia.

English.	Hokkien.	Cantonese.	Character.
Sarawak	Su-la-wak	Sa-la-wak	砂勝越
Selangor	Kit-lang	Kat-lang	吉隆
	Sit-lang-ngo	Su-lang-ngok	寔蘭莪
Serapong	Sa-li-pong	Sa-la-pong	
Shanghai	Siang-hai	Sheung-hoi	上海
Siam	Siam-lo Siam-ti	Chhim-lo	暹羅
Singkep	Sin-kip	San-kap	新汲
Situl	Si-tüt	Si-to	寔突
Sourabaya	Su-li-ba	Sz-shui	泗水
	Si-li-buat	Siet-lei-fa	泗里末
Spain[23]	Toa-lu-song	Tai-lui-sung	大呂宋
Swatow	Sua^n-than	Shan-thau	汕頭
Sungei Ujong	Hu-jiong	Fu-yong	芙蓉
Tavoy	Tho-a	Tho-nga	土瓦
Tebing Tinggi	Chiok-be teng-ngi	Shek-ma teng-yi	石馬丁宜

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[23] Toa-lu-song 'means 'Big Luzon', as distinct from Manila which is called 'Small Luzon.'

English.	Hokkien.	Cantonese.	Character.
Tokio[24]	Tang-kia	Tung-keng	東京
Tongkah	Kong-ka	Hung--ka	通扣
	...	Kham-ka	禽卡
Tang[52]	Tang li	...	董裡
	...	Wu-chiu-tang	楜椒等
Trengganu	Teng-ka-no	Teng-nga-nu	丁加奴
Wei-hai-wei[26]	Ui-hai-ui	Wai-hoi-wai	威海衞
Yokohama[27]	Hueⁿ-pin	Wang-pan	橫濱

[24] 'Eastern capital.'
[25] 'Wu-chiu tang' means 'Pepper Thang.'
[26] 'Strong sea protection.'
[27] 'Cross shore.'

Chinese Names of Streets in Singapore and Malacca, together with a list of names of the most important places in the F. M. S.

Some years ago the late Mr H. T. Haughton of the Straits Settlements Civil Service compiled a list of the native names, Chinese and Tamil, of some of the most important streets in Singapore.

Since this list was published, Singapore has grown and streets have multiplied, so that Mr. Haughton's list, useful as far as it goes, is somewhat out of date.

I have in the previous pages endeavoured to bring it up to date, as far as the Chinese names are concerned. To do this satisfactorily, is impossible. Exact names for many streets do not exist. In this respect Singapore differs from Penang, where new streets are fewer and more easily identified. It is characteristic of the Chinese that in a matter of this kind, accuracy is the last thing that strikes them as essential. If you ask a Chinaman—or better still a Chinese woman—newly arrived and resident in Singapore, where he lives, the invariable answer will be "Singapore." A second query will perhaps elicit information as to the district of the town or island, but it will take many questions before the actual address can be ascertained, though it might have been given directly, if the person questioned had thought that it was of any importance.

The Chinese have a happy-go-lucky way of using one expression to describe any one of perhaps a dozen streets. Any Chinaman living at the town-end of Bukit Timah Road, in Albert Street, Selegie Road, near Kandang Kerbau Police Station, Short Street, or in any of the numerous lanes in that neighbourhood will, if asked where he lives, reply "Tek Kah" (i. e. Foot of the bamboos), and unless cross-examined would not volunteer any further information, though the answer might mean any one of a dozen streets.

The more important thoroughfares have recognised names known to Chinese of all classes. There are. however, a number of new and smaller streets, and it appears to me that it is important that these should be easily identified. Especially is it important that official interpreters should have a through knowledge of the names, English and Chinese, for all the streets in the town, a matter in which, in my experience, many Government interpreters are lamentably ignorant.

As already remarked, in many cases there are no Chinese names for streets. Tanjong Pagar and Kampong Kapor districts are full of new roads and streets, nameless at present to the Chinese, and defying identification. The houses are new and often not occupied by Chinese, but Singapore is a Chinese town and any one who has watched its growth will realise that in all likelihood these new roads will be busy throughfares before many years are past, and sooner or later no doubt the Chinese will find names for them. Now it seems a pity that street-names should be multiplied unsystematically in Chinese as well as in English, and I should like to see the Municipality step in and take the mater in hand. Suggestions need not be made here as to what plan should be pursued, but there are several alternative methods, and I think something ought to be done.

I should state that infallibility cannot be claimed for this list. Various informants have given contradictory information. However such as it is, it may, I hope, prove useful to any European with a knowledge of Chinese and to any Chinaman with a knowledge of English.

I have added the names for some of the more important bridges, police stations and public buildings, and where I have been able to ascertain them, the names of the country roads and districts. Here I found it very difficult to obtain exact information, most of what is given having been kindly furnished by Mr. Langham-Carter of the Land Office.

Following will be found a list some of the places with which Singapore has connections, commercial or otherwise. This includes the names of European States and, at the other extreme, local coast ports.

Mr. E. A. Gardiner of the Straits Police kindly sent me a list of the names of streets in Malacca, with some interesting notes by Mr. Go Lai Kui, the Government Interpreter there.

And through the courtesy of various officers of the Federated Malay States Civil Service, I have been furnished with the Chinese equivalents for the names of the most important places in the States.

Mr. A. M. Pountney contributed Selangor.

Mr. W. Cowan sent the Perak names, with notes by Mr. W. D. Barnes.

For Pahang I am indebted to the District Officers at Raub and Kuala Lipis.

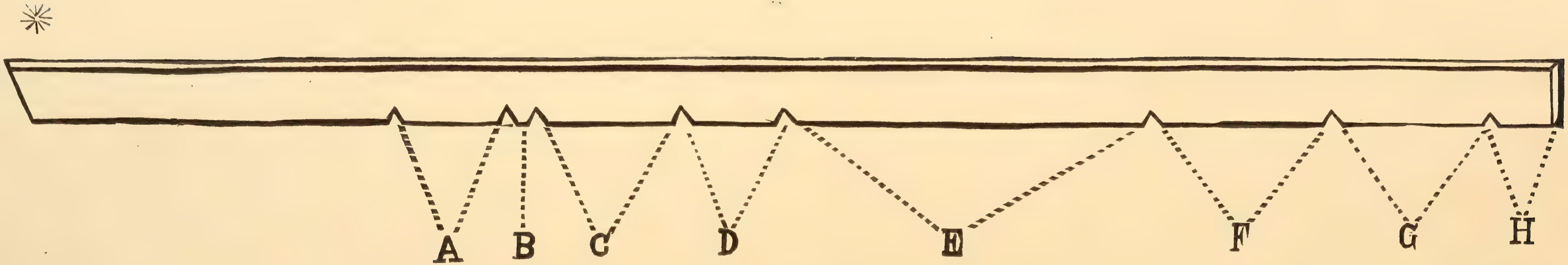
The Negri Sembilan names were supplied through Mr. Ridges.

I was unable to obtain Chinese names for up-country Kampongs in Malacca—there are none apparently—and the Chinese population is comparatively thin there.

Penang and Province Wellesley have already been dealt with in the admirable notes of Mr. Lo Man Yuk.

Finally I must express my thanks to Messrs. Ho Siak Kuan and Leung Pui Kam of the Chinese Protectorate in Singapore and Penang respectively, for their assistance in filling in the Chinese characters for the names.

Penang, March, 1904.



R. Shelford. × $\frac{1}{3}$

Addendum to Mr. Hose's paper on Methods of Reckoning Time.

Since this paper was written a good deal more information about the Kenyah Sundial has come to hand, and it is evident that the methods employed by the different tribes in measuring the noon-day shadow and the omens attached to the respective lengths of the shadow vary considerably. This is but natural since the different tribes plant their crops at different times of the year. A figure of a measuring-stick (*asu do*) of the Aki Kenyahs, a down-river tribe who plant in July, is now given; the actual specimen is in the Sarawak Museum, and I am indebted to the curator, Mr. R. Shelford, for the drawing.

Explanation of the Figure.

Stick (asu do) used by the Kenyahs to measure the shadow cast by the Sundial (tukar do).

The stick is 72 centimetres in length and 1.7 centimetres broad; one border is notched. The end marked by an asterisk in the figure is held in the hand so that the stick lies along the extended arm, the notches corresponding to certain regions of the arm and hand. The relation of the length of the shadow cast at noon-day by the *tukar do* to the spaces between the notches determines the omen given by the *dayong* as described in the paper. The letters A to H refer to the spaces between the notches.

A. Known as *Kujut Kata*, the knuckles; this is a good time for planting, but there will be deaths in the house and the people of the house will always be crying and rubbing their eyes with their knuckles; in pounding out the padi, some padi will always remain mixed with the rice.

B. Corresponds to the position of the string often worn round the wrist to tie in the soul of the wearer, a bead or some charm being often threaded on the string. This marks a good time for planting.

C. *Leku Sang*, corresponds to the position of the wristlet made from fibres of the *sang* palm by men on the war paths to distinguish them from the enemy. A good time for planting.

D. *Muga mipit*, marks a bad time for planting because the sparrows (*mipit*) will destroy the crop.

E. *Idan ok*, i.e., the small part of the forearm, a bad time for planting.

F. *Idan aiar*, i.e., the thick part of the forearm, a bad time for planting.

G. *Selong jangin*, i.e., the brass armlet worn round the biceps; this marks a good time for planting.

H. *Lingai Sapeh*, i.e., the junction of the coat-sleeve with the coat; a good time for planting.

Dr. Brandstetter's Malayo-polynesian Researches: An Appreciation.

There is (or was) in the East, a newspaper claiming to have the largest circulation in Asia, British India excepted. The exception is a big one. If in the same way I were to say that Professor Brandstetter of Lucerne is the soundest and most accurate Malayan scholar in Europe, outside of Holland, I should be merely stating in the fewest words a plain fact which in my judgment, is not as widely known as it deserves to be; and I hope that no one will so far misunderstand my meaning as to imagine that I am attempting to make a scurvy jest at the expense of that learned writer. Under the general title of ‘ Malayo-Polynesische Forschungen” he has issued a number of very valuable studies on Malayan subjects, whose titles I subjoin in a note for the benefit of all whom it may concern.* There is not room here to discuss them all, nor are they all of equal interest to readers in the Malay Peninsula; I will therefore confine myself to those which appeal more particularly to students of Malay.

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* *First Series.*

I. Der Natursinn in den ältern Literaturwerken der Malayen.
II. Die Beziehungen des Malagasy zum Malayischen.
III. Die Geschichte des Hang Tuwah, ein älterer Malayischer Sittenroman, ins Deutsche übersetzt.
IV. Die Geschichte von König Indjilai, eine bugische Erzählung, ins Deutsche übersetzt.
V. Die Gründung von Wadjo, eive historische Sage aus Südwest celebes, ins Deutsche übersetzt.
VI. Das Lehnwort ins Bugischen.

Second Series.

I. Die Geschichte von Djalalankara, ein Makassarischer Roman, in deutscher Sprache nacherzählt.
II. Tagalen und Madecassen, eine sprachver-gleichende Abhandlung, als Orientierung für Ethnographen und Sprachforscher.
III. (In preparation) Beiträge zur Fixierung der Stellung welche die Südphilippinischen Idiome innerhalb des Malayo-polynesischen Sprachstammes einnehmen.

His two studies on the "relation of Malagasy to Malay" (1893; pp. 43) and on "Tagal and Malagasy "(1902; pp. 85), taken together, give a very clear idea of the interconnection of these languages and throw considerable light on their past history and development.

Brandstetter's strong point is his strictly scientific method. He will not accept conjectural identifications or vague unsupported theories of relationship: he distinguishes most carefully between what he considers to be *proved* and what is merely *probable.* Consequently his results, when they are such as he himself considers certain, may be accepted with a high degree of confidence by his readers.

In choosing two languages so widely separated in geographical distribution as Tagal (or Tagalog) and Malagasy for his points of comparison, he brings out very strikingly the essential unity of the Malayan family of languages, a unity which is evidently due to common descent and not, as Crawfurd perversely maintained, to the influence of Malay or Javanese modifying a number of originally alien tongues. English students of this subject seem to find a difficulty in getting away from the idea that Malay is the normal type of a Malayan language: that, however, is very far from being the case. From the point of view of phonology, Malay is often relatively very archaic, much nearer to the original sounds, than some of the cognate tongues (e. g. Malagasy and Javanese); but even in this regard Malay is not always the truest representative of the primitive type. Then again Malay lacks many old words which have been preserved in distant and widely separated parts of the Malayo-polynesian region; and this, as van der Tuuk pointed out long ago, is proof enough that they do not owe their common element to Malay. Further, Malay is so much simplified in its grammar that it occupies in the Malayan family much the same relative position, that modern Persian or English occupy among the Indo-European languages: its system of agglutination has been reduced to a mere remnant, whereas some of these languages have preserved it in something like its primitive luxuriance. In this respect Tagal and Malagasy are more archaic than Malay. An example will best explain what is meant. The Malay *surat* "writing," is represented in Tagal by *sulat*, in Malagasy by *sóratra* (Malagasy *o* is pronounced *u*).

This verb can be conjugated thus in these two languages:—

ACTIVE.

	Tagal.	*Malagasy.*
Present	nanunulat	manoratra
Preterite	nanulat	nanoratra
Future	manunulat	hanoratra
Imperative	manulat	manaráta

PASSIVE.

	Tagal.	*Malagasy*
Present	sinusulatan	sorátana
Preterite	sinulatan	nosoratana
Future	susulatan	hosoratana
Imperative	sulatan	soráty[*]

Here, besides prefixes and suffixes, infixes and reduplication play, in Tagal, a great part.

It is not necessary to add here, by way of contrast, the meagre list of variations which the Malay verb usually assumes: they will be familiar to the reader. Apart from these, there are in Malay (as Dr. Luering pointed out in No. 39 of this Journal) a few scattered survivals which show that the language formerly had a more fully elaborated system of agglutination than it now possesses.

The comparison of some of the words common to Tagal and Malagasy (of which Brandstetter gives a remarkably long and interesting list) shows that in some cases a form more archaic than that of Malay must be inferred as the common original. Thus, for instance, it is practically certain that "fire" was once *apui* not *api*, and "dead" *matai*, "liver" *hatai*, and so on. But even more interesting, perhaps, is the light which these common words throw on the state of civilization of the primitive ancestors of these tribes before their dispersion. It is clear from the comparative vocabulary that they were quite at home on the tropical seas: they have common words for the sea and the shore, for the crocodile, the prawn, the ray or skate (fish), and the dugong (though the Malagasy *trozona* now means whale, apparently); they had sails for their boats and they used hooks for fishing. Two, at least, of the points of the compass are represented by common words, though their relative directions have shifted and no longer correspond in the different languages. So too for words relating to life on land: they were acquainted with rice, yams, bamboo and, probably, the cocoanut and screw-palm (pandanus); their material civilization comprised acquaintance with iron and, apparently, silver; they had knives and files, and hewed wood into stakes and planks; they had houses with walls and roofs; they had pots, dishes and spoons (or ladles) and mortars with pestles (probably the large ones even now used for pounding rice); and they wore garments of some sort of cloth. They had some simple standards of measurement, notably the fathom (the distance across the outstretched arms). They had words for "month" and "year," and a series of numerals to 1000, inclusive. Words relating to the transactions of life in a social community are also not altoghter absent; buying and borrowing, debt and payment, are ideas which appear to have been familiar to them; and they are not without words which indicate differences of social rank, e. g. the existence of chiefs to whom personal respect was due. The widespread institution of the "taboo" appears to have already existed among them in those early days.

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[*] $y=i$, as in English at the end of a word: Malagasy spelling was invented by English missionaries.

This is by no means an exhaustive account of the condition of these people: I have merely picked out a few of the salient facts embodied in Brandstetter's list of words, and these it must be remembered are drawn from Tagal and Malagasy only. If the other Malayan languages (whose name is legion) were taken into account, many additional details could be added to this outline sketch: it is enough, however, to show that such researches as these may lead to very interesting discoveries, quite apart from the merely technical details of philology.

These last I shall not pretend to deal with here, only referring the reader to these two valuable monographs, where he will find them set out and very skilfully handled.

I have left myself little space to notice the other numbers of the series to which I would draw particular attention. Of the Hikayat Hang Tuah I will merely say that it is an historical romance of the life of the well-known Malacca hero, and that while it is probably of no great value from the point of view of history strictly so called, it is a highly interesting picture of Malay life and manners and by no means deserves the unmixed contempt which Crawfurd thought fit to pour upon it. It dates probably from the early part of the 17th century and is a recognized specimen of the best type of Malay classical prose literature.

The only other of Brandstetters' works which I propose to mention here is his essay on the Malay appreciation of the beauties of nature (and their aesthetic sense in general) as evidenced in their literature. Here he lays a good deal of Malay prose and poetry under contribution and by a number of well selected examples reveals a side of the Malay character which is not, I think, in their every day life at least, very obvious to the ordinary observer. He has confined himself to literary works older than the 19th century, to the exclusion of all modern productions, and perhaps therefore European influence may be discounted: the question of the imitation of India models is more difficult, but on the whole Brandstetter is disposed to regard the mental attitude which he illustrates as being really original to the Malay mind, and he has not to take his examples from works, like the *Sri Rama*, which are avowedly based on Indian originals. Even in these, however, it may be remarked that the local colouring is distinctly Malay; and one need only look, for instance, at the beautiful passage quoted and translated by Maxwell on pp. 89 and 90 of No. 17 of this Journal, to be convinced that the Malay rhapsodist from whom Maxwell derived his version of the story has not servilely copied any Indian model but has given the rein to his own fancy and freely exercised his own descriptive power.

It is impossible to go into details here, but I hope that the indications I have given will induce some of the readers of this Journal to refer both to Brandstetter's essay and to his Malay originals. Victor Hugo did not disdain to translate Malay pantuns: a poet himself, he could appreciate the poetry which many of them so quaintly embody, and I venture to think that an anthology could be made up out of Malay literature which would be worthy to rank with many other such collections in better known languages. Unfortunately the Malay genius does not lend itself to sustained effort: it rises here and there to real heights of poetic fancy, but taken as a whole it is undoubtedly pedestrian. All the more reason, therefore, is there for picking out the gems which lie hidden amongst so much that is little better than dross.

This short notice can hardly do justice to the excellence of Brandstetter's work: I can say no more, in summing up, than that that he is a worthy pupil of the Dutch School, and that in attempting to carry on the work of Malayan research beyond the confines of Holland and Netherlands India, he is setting an example which may well be followed elsewhere. It is unfortunate that the work of Dutch scholars in this line of study is so little known to English readers. The initial difficulties are not nearly as great as they are supposed to be: one can easily pick up enough understanding of the Dutch written language to be able to read intelligently a Dutch essay on a Malayan subject. However, as Englishmen, persistently and very much to their own disadvantage, continue to ignore the Dutch authorities, perhaps it may be some help to such of them as have a fair knowledge of German to have Brandstetter's work to refer to. His work, however, is purely original, though he has been trained in the Dutch school and would be the first to acknowledge his indebtedness to it, as indeed he repeatedly does; and when one says that he is making for himself a place in the list of distinguished Malayan scholars which holds such names as van der Tuuk, Kern, Niemann and Brandes, one need, I think, say no more.

C. O. Blagden.

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